5-16-2018

Egos Gone Wild: *Threat Detection and the Domains Indicative of Toxic Leadership*

Matthew S. Arbogast
University of South Florida, matthewarbogast37@gmail.com

Egos Gone Wild:

Threat Detection and the Domains Indicative of Toxic Leadership

by

Matthew S. Arbogast

A dissertation submitted in partial fulfillment
of the requirements of the degree of
Doctor of Philosophy Industrial and Organizational Psychology
Department of Psychology
College of Arts and Sciences
University of South Florida

Major Professor: Michael D. Coovert, Ph.D.
Walter C. Borman, Ph.D.
Michael Braun, Ph.D.
Chad Dubé, Ph.D.
Joseph A. Vandello, Ph.D.

Date of Approval:
May 2, 2018

Keywords: egoistic dominance, abusive supervision, destructive leadership

Acknowledgments

I would like to first thank my family for enduring all of the hardships associated with supporting my academic pursuits, along with the intense pressures involved in a 20 year military career. I am also forever grateful to the United States Military Academy for supporting my enrollment in this program and the leaders of The Simon Center for the Professional Military Ethic for trusting me to train the future leaders of our great Nation. Thank you to all of my former Soldiers and life-long mentors for providing countless opportunities to learn and grow.

Thank you to Dr. Michael Coovert, my primary advisor, who continues to provide caring support and sound guidance. I also appreciate the renowned patience and development insights offered by my committee members: Dr. Walter Borman, Dr. Michael Braun, Dr. Joseph Vandello, and Dr. Chad Dubé. Finally, thank you to the entire faculty in the University of South Florida Industrial and Organizational Psychology department for creating such a well-respected and highly challenging academic program. I will always appreciate your professionalism and the genuine care for my growth and development.

Disclaimer: The views expressed in this document are those of the author and do not necessarily reflect those of any military or government organization.

Table of Contents

List of Tables

List of Figures

Abstract

Toxic leaders are a serious problem, but shockingly, there is no standard detection tool that is both efficient and accurate. Compounding the problem are the various definitions and descriptions used to operationalize toxic leadership. This research sought to align the literature, offer a concise definition, and assess the domains indicative of toxic leadership through two conceptually compatible studies. Study 1 involved development of a toxic leader threat detection scale. Results using a variable-centered approach indicated that follower perceptions (n = 357) of leader empathy (4-item scale; α = .93) and the need for achievement recognition (4-item scale; α = .83) significantly predicted the egoistic dominance behaviors (5-item scale; α = .93) employed by toxic leaders (R^2 = .647, p < .001). Using a person-centered approach, the scale scores also revealed latent clusters of distinct behavioral patterns, representing significantly different toxic leader threat levels (low, medium, and high). Study 2 assessed whether followers (n = 357), without access to behavioral information, would infer toxic characteristics simply from a leader's physical appearance. Participants perceived images of male leaders (η^2 = .131) with masculine facial structures (η^2 = .596) as most likely to behave aggressively, while feminine facial structures (η^2 = .400) and female images (η^2 = .104) created the highest perceptions of empathy. The subjects also selected male leaders with masculine faces (η^2 = .044; η^2 = .015) as more likely to desire recognition, but with an inverse relationship (η^2 = .073) such that feminine looking males earned the lowest scores. Overall, these results supported the idea that empathy and the need for achievement recognition create an "ego gone wild" condition and, not only can we measure the behavioral tendencies of toxic leaders, but perhaps we can "see" them as well.

Introduction

Overly aggressive and abusive leaders are a well-documented problem for organizations and their members (Tepper, 2000; Tepper, 2007; Steele, 2011; Paulhus & Williams, 2002; Spain, Harms, & Lebreton, 2014). Although the naming conventions of these corrosive leader styles vary among *toxic leadership* (Whicker, 1997; Reed, 2004; Steele, 2011), *abusive supervision* (Tepper, 2000), *supervisor aggression* (Schat, Frone, & Kelloway, 2006), and *destructive leadership* (Padilla, Hogan, & Kaiser, 2007), they all generally coalesce around the same phenomenon – a leader's systematic employment of abusive and harmful anti-subordinate behaviors. There is strong consensus that an overwhelming amount of negative outcomes are associated with abusive leaders, including low job satisfaction, low organizational commitment, higher turnover intentions, and even psychological distress (Tepper, 2007; Schyns & Schilling, 2013). Unfortunately, these examples barely scratch the surface of a deep-rooted problem that has adverse effects on people and across numerous organizations. In fact, past estimates have shown that abusive, or toxic, leaders have cost US corporations billions of dollars each year (Tepper, 2007) and could even lead to mutiny (Steele, 2011) in military organizations.

Perhaps most troubling is the idea that this negative leadership style is a trickle-down phenomenon that is sometimes hard to detect. Research indicates that abusive leaders are positively related to the abusive behavior employed by their subordinate supervisors. In other words, supervisors that have been subjected to mistreatment can themselves perpetuate the same dreadful conduct onto their own followers (Ashforth, 1994; Hoobler & Brass, 2006; Tepper, 2007; Steele, 2011). One study even showed that systematic mistreatment from a leader can

negatively impact employees as far as two hierarchical levels down (Mawritz, Mayer, Hoobler, Wayne, & Marinova, 2012). This suggests that once an abusive leader infiltrates the upper echelons of an organization, a host of underlings may become "infected" with the same type of toxic approach. The cancerous characteristic of this dangerously destructive behavior is best depicted in Steele's (2011) two year review of antecedents and consequences of toxic leadership in the US Army. Steele shed light on the pervasive nature quite well, reporting how 100% of an Army leader sample (n = 171) was exposed to a toxic leader at some point during their careers (Reed & Bullis, 2009) and 47% of those respondents also felt their organization was ineffective at proper identification. Moreover, toxic leaders are sometimes not detected until the organization itself becomes dysfunctional, as these leaders can use high-status positions to surround themselves with submissive and/or emulating individuals (Vreja, Balan, & Bosca, 2016) that may even consider these behaviors acceptable. Thus, not only are toxic leader behaviors contagious, but they are reportedly hard to detect for remediation or removal.

Tragically, the wounds inflicted by systematically abusive leaders are not restricted to those within the confines of organizational boundaries; the repercussions can also extend to families. Referencing the "flow downhill" and "kick-the-dog" metaphors, Hoobler and Brass (2006) found that targets of abusive supervisors can enact displaced aggression onto their own family members. These mistreated subordinates can remain subdued while at work, only to release their frustrations at home when triggered by unrelated events in their personal lives. The significant distal relationship these authors found between abusive supervision and family undermining (r = .19) indicates an alarming cascading effect, raising the importance of detecting these harmful leaders early enough to stanch the flow of negative behaviors.

Solving the Detection Problem

The purpose of this study is to 1) align existing literature and highlight the scholarly evolution of the toxic leadership construct, including its "great awakening" within military organizations; 2) assess whether a leader's physical features influence follower perceptions related to toxic leaders; and 3) solve the detection problem by creating a behavioral scale that helps examine the relationship among three potential domains of toxic leadership: the need for achievement recognition, empathy, and egoistic dominance. If these relationships are moderate to strong, the scale components can guide the detection of current or future toxic leaders.

It is logical to first assume that spotting negative leader behaviors is easy, but this is surprisingly hard in practice. The dark side of leadership is complex and can even produce some desirable outcomes, including a positive relationship with performance ratings (Kaiser, LeBreton, & Hogan, 2015). These otherwise formidable leaders can display high intelligence and skill; improve short-term productivity for the organization; and even possess redeeming personal qualities (Steele, 2011). Interestingly, "bright" traits associated with leader emergence and effectiveness can also lead to "dark" leadership manifestations (Judge, Piccolo, & Kosalka, 2009). These revelations indicate that negative leader behaviors could easily be overlooked by results-oriented raters, especially if they are covertly masked through Machiavellianism.[1] Furthermore, it is often difficult to recognize the boundary between a strong, no-nonsense leader that actually cares for subordinates and one that is truly abusive (Hannah, Schaubroeck, Avolio, Doty, Kozlowski, Lord, & Trevino, 2010), treating subordinates like disposable instruments (Reed, 2004). Not only can toxic leaders be productive (Einarsen, Aasland, & Skogstad, 2007), but some followers tend to hold positive views of their leaders (Hollander 1985) regardless of

[1] Machiavellianism is a manipulative and socially aversive process (Paulhus & Williams, 2002) that leverages politics, power, and expressive behavior to influence others (Bedell, Hunter, Angie, & Vert, 2006).

their effectiveness. Given the danger associated with these often undetected threats, an accurate tool is needed to flag leaders that display behaviors consistent with toxic leadership. However, before plunging ahead to propose a detection tool, it is important to first define the phenomenon.

Defining Toxic Leadership

The naming conventions and definitions for the negative aspects of leadership need alignment. An astute reader may have already noticed that the introduction is littered with various terms that are presumed interchangeable. However, despite their strong conceptual overlap (Tepper, 2007), there are also points of divergence. Adequate specification of this construct is essential and, without clarification, the perpetual question of construct homogeneity may plague research in this area. Similar to investigations of job performance (Campbell, Gasser, & Oswald, 1996), poor conceptual distinction impedes identification and treatment of toxic leadership because it is hard to meaningfully interpret different lists of indicators that fail to represent the same latent construct. This problem can destroy the practicality of research findings (Tepper, 2007); prevent parsimonious representation (Le, Schmidt, Harter, & Lauver, 2010); and generate inconsistencies among merged data sets. The process of detecting and accounting for errors and inconsistencies from large volumes of data becomes problematic when either the same name is used for multiple constructs or when different names are used to describe the same constructs (Rahm & Do, 2000). This can impede data collection efforts for future meta-analyses and other important research methods. Thus, a review of the dominant conceptual understandings of this phenomenon is warranted to capture the full criterion bandwidth and ensure the broadest coverage of the domain (Hogan & Roberts, 1996; Speer, Christiansen, Goffin, & Goff, 2014).

Table 1. *Varying definitions and characteristics related to toxic leadership.*

COMMON TERMS	DEFINITION/CHARACTERIZATION
Petty Tyrant Ashforth (1994)	*"One who lords his or her power over others…"* (p. 755) and *"…acts in an arbitrary and self-aggrandizing manner, belittles subordinates, evidences lack of consideration, forces conflict resolution, discourages initiative and utilizes non-contingent punishment."* (p. 772)
Toxic Leaders Whicker (1996)	*"Maladjusted, malcontent, and often malevolent, even malicious. They succeed by tearing others down. They glory in turf protection, fighting and controlling rather than uplifting followers."* They also have a *"deep-seated but well-disguised sense of personal inadequacy, a focus on selfish values, and cleverness at deception."* (p. 12)
Lipman-Blumen (2005)	*"Engage in numerous destructive behaviors and exhibit certain dysfunctional characteristics that inflict some reasonably serious and enduring harm on their followers and their organizations"* (p. 18)
Heppell (2011)	*"Generate a serious and enduring negative, even poisonous, effect upon the individuals, families, organizations, communities, and societies exposed to their methods"* (p. 243)
Steele (2011)	*"Promote themselves at the expense of their subordinates, and usually do so without considering long-term ramifications to their subordinates…and the (organization)"* (p. 3)
Schmidt & Hanges, (2012)	*"Authoritarian narcissists who unpredictably engage in political behaviors and authoritarian supervision"* (p. 29).
Toxic Leadership Reed & Olsen (2010)	*"Lack of concern for the well-being of subordinates, a personality or interpersonal technique that negatively affects organizational climate, and a conviction by subordinates that the leader is motivated primarily by self-interest."* (p. 58)
HQDA (2012)	*"A combination of self-centered attitudes, motivations, and behaviors that have adverse effects on subordinates, the organization, and mission performance. This leader lacks concern for others and the climate of the organization, which leads to short- and long-term negative effects. The toxic leader operates with an inflated sense of self-worth and from acute self-interest. Toxic leaders consistently use dysfunctional behaviors to deceive, intimidate, coerce, or unfairly punish others to get what they want for themselves."* (p. 3)
Toxic Manager Flynn (1999)	*"Manager who bullies, threatens, yells… whose mood swings determine the climate of the office on any given workday…the backbiting, belittling boss from hell."* (p. 44)
Abusive Supervision Tepper (2000)	*"Subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact."* (p. 178)
Supervisor undermining Duffy et al. (2002)	*"Behavior(s) intended to hinder, over time, the ability to establish and maintain positive interpersonal relationships, work-related success, and favorable reputation…perceived as intentionally designed"* and are also *"insidious, in that they weaken gradually"* (p. 332)
Destructive Leadership Einarsen, et al. (2007)	*"The systematic and repeated behaviour by a leader, supervisor or manager that violates the legitimate interest of the organisation by undermining and/or sabotaging the organisation's goals, tasks, resources, and effectiveness and/or the motivation, well-being or job satisfaction of subordinates."* (p. 208)
Padilla et al. (2007)	*"Seldom absolutely or entirely destructive…involves dominance, coercion, and manipulation…focused more on the leader's needs than the needs of the larger social group... outcomes that compromise the quality of life for constituents and detract from the organization's main purposes…outcomes are not exclusively the result of destructive leaders, but are also products of susceptible followers and conducive environments."* (p. 179)
Krasikova et al. (2013)	*"Volitional behavior by a leader that can harm or intends to harm a leader's organization and/or followers by (a) encouraging followers to pursue goals that contravene the legitimate interests of the organization and/or (b) employing a leadership style that involves the use of harmful methods of influence with followers, regardless of justifications for such behavior*
Supervisor aggression Mitchell & Ambrose (2012)	*"Supervisor aggression is defined as employees' perceptions of the supervisor's intentionally harmful behavior against them…considered akin to abusive supervision."* (P. 1148)
Aversive leadership Bligh et al. (2007)	*"Behaviors that emphasize the use of threats, intimidation, and punishment."* (P. 530)
Despotic leadership De Hoogh & Den Hartog (2008)	*"Personal dominance and authoritarian behavior that serves the self-interest of the leader, is self-aggrandizing and exploitative of others."* (P. 298)
Dark Leadership Conger (1990)	*"When a leader's behaviors become exaggerated, lose touch with reality, or become vehicles for purely personal gain, they may harm the leader and the organization."* (P. 44)
Gaddis & Foster (2015)	*"Normally advantageous strategies that individuals may over-use in stressful or ambiguous situations that challenge self-regulation and social vigilance."* (P. 28)

The most prominent terms and definitions used for this construct (Table 1) seemingly refer to the same harmful leadership phenomenon, albeit from alternative view-points (e.g. leader vs leadership and process vs outcome). Due to the poisonous and spreading nature of this leadership style (Lipman-Blumen, 2005), the term ***toxic leadership*** was deemed most appropriate for labeling the construct and for capturing convergence among various overlapping terms. Combining the different terms and definitional subsets into an all-encompassing title of toxic leadership is problematic, as there is no easy way to conceptualize such a broad, far-reaching construct (Peterson, 2010). The definition must be specific enough to build an adequate detection measure, yet broad enough to include the full bandwidth of the construct. Furthermore, the field has already produced not only different terminology, but also varying definitions among some of the same naming conventions. Although many of the existing definitions are unclear (Padilla et al., 2007), they all seem to describe different aspects of toxic leadership. Thus, for the purpose of detecting leaders who match the varying descriptions, a broad definition of toxic leadership was adopted for this study:

Toxic Leadership: *A process in which a leader systematically employs abusive, anti-subordinate behaviors to dominate their followers and achieve the leader's need-based goals.*

There are a few disclaimers to address regarding this definition. First, it is important to note that the problem of various descriptions and viewpoints is not unique to the negative aspects of leadership. Explorations of the effective side of leadership have also produced numerous definitions, emphasizing how leadership is relational, situated, patterned, and either formal or informal (Carter, DeChurch, Braun, & Contractor, 2015). Thus, there is no expectation that the proposed definition of toxic leadership will satisfy every leading scholar in the field, but

it does reflect some important aspects of the phenomenon. Mainly, that it is a systematic process (patterned), employed to dominate followers (relational), and geared toward achieving the leader's condition-based goals (situational); formality was not specified, as both formal and informal leaders can employ anti-subordinate behaviors.

There are other purposeful omissions from this definition that are worth noting, including: leader intent to harm, subordinate perceptions, and contextual considerations. Some scholars have specified that the leader's intent to harm is a boundary condition for this construct (Duffy, Ganster, & Pagon, 2002; Mitchell & Ambrose, 2012; Krasikova, Green, & LeBreton, 2013). However, specifying this condition would eliminate those oblivious, but equally harmful leaders that unknowingly mistreat their subordinates while trying to achieve noble objectives, such as pursuing organizational goals or enforcing high standards. Other researchers have included subordinate perceptions in their definitions (Tepper, 2000; Duffy et al., 2002; Mitchell & Ambrose, 2012). Although perceptions are important for detection, including them as a defining feature suggests that harmful consequences or mistreatment does not occur unless it is recognized. This is troublesome, as toxic leaders can also employ cunning and discrete political tactics behind-the-scenes that undermine and destroy those around them; hence, the detection problem.

Finally, and perhaps most important, is the role of context. One might try and argue that under certain conditions, seemingly obvious toxic leadership behaviors may be justified and even accepted by certain organizational cultures (e.g. yelling, denigrating subordinates, or threatening punishment). This might be true, but the existence of a supportive climate and accepting organizational culture does not necessarily mean the consequences of these behaviors are not harmful. One very poignant example of this stems from research on toxic leadership

within the military. The tough-love culture, need for discipline and toughness, and coveted values (e.g. loyalty, respect, discipline, courage) can, at times, inadvertently cultivated a climate (Soeters & Recht, 2001) that appears to consider toxic leadership behaviors, not just necessary, but possibly even effective. Recently, the Department of the Army (2012) formally recognized the unhealthy consequences and pervasiveness of this corrosive leadership style (Reed, 2004; Steele 2011; Gallus Walsh, van Driel, Gouge, & Antolic, 2013), addressing it as a negative approach that *"leave people and organizations in a worse condition than when the leader-follower relationship started"* (p. 3). This shows that, despite permissive contextual environments, behaviors consistent with toxic leadership still have adverse effects on organizations. In sum, specifying intent, perception, and contextual boundaries for toxic leadership is too limiting; thus, the broad definition applied for this study is more appropriate for capturing the full-domain of the construct. The approach in the following section is to walk through the theoretical evolution of toxic leadership; unpack the contents of this multi-dimensional construct; and capture the most critical features and behaviors that are creating such dire organizational threats.

Theoretical Evolution of the Toxic Leadership Construct

Bathsheba Syndrome. Bad leaders are nothing new; in fact, they are easily traced back to biblical times with the rise and fall of King David. Starting from humble beginnings, historical accounts of King David portray him as an ideal, morally grounded leader. That is, until David became consumed with his lust over Bathsheba, the beautiful wife of one of his loyal soldiers. This adulterous act was accredited for starting King David's unethical death spiral that wreaked havoc in David's personal life and eventually for the Israelites themselves (Ludwig & Longenecker, 1993). This lust-driven fall from grace is eerily similar to some of today's most

notorious leader blunders (e.g., General David Petraeus; President Bill Clinton). Thus, it is important to consider the potential underpinnings of such drastic departures from normatively appropriate behavior. Ludwig & Longenecker (1993) proposed that David's previously ethical life was corroded by, of all things, success. Specifically, they suggested that his extreme success caused the following outcomes: a false sense of confidence that outcomes can be manipulated; an unhealthy complacency; privileged and unchecked access; and an unbounded control of resources.

In sum, the accounts of King David show that, even from our earliest beginnings, there was a distinct recognition that unethical behaviors can destroy individuals, organizations, and entire nations. Perhaps most importantly, even the greatest and most successful leaders are susceptible to the "Bathsheba Syndrome" under the right conditions. This biblical lesson in morality shows how successful leaders can suddenly turn unethical, ineffective, or destructive. Today, this idea is akin to the concept of career and leader derailment (McCall & Lombardo, 1983; Bentz, 1985; Hogan & Kaiser, 2005), which has also been referred to as the "dark side" of leadership (Conger, 1990).

Dark Leadership and Derailment. Conger (1990) proposed that leaders, much like King David, have the capacity to produce both positive (bright) and negative (dark) outcomes. When behaviors normally consistent with positive effects become misplaced or exaggerated, leaders can fall into a death spiral of incompetence and unwittingly produce negative outcomes. Conger (1990) specifically suggested that even something as seemingly benign as providing a strategic vision, which is almost always considered a bright leader behavior, can still produce ill-effects when it comes at the wrong time or sends the organization in the wrong direction. He also described how commonly accepted management techniques (e.g. providing direction,

impression management) can quickly become liabilities when they backfire, resulting in poor relationships and an oppressive style of micro-management.

The trait-based components of derailment have been aligned with the following defective interpersonal styles (Horney, 1950; Hogan, Hogan, & Kaiser, 2010; Hogan & Hogan, 2001): *moving away from people* (avoidance and intimidation); *moving toward people* (building divisive alliances); and *moving against people* (dominate and manipulate). Horney (1950) originally suggested that individuals embracing these interpersonal behavioral tendencies are driven by needs grounded in neuroticism. Over time, these trait-based perspectives morphed into a more comprehensive understanding of how extreme extensions of bright traits are associated with ineffective leadership. Today, derailed, counterproductive-leaders tend to exhibit extremely high or extremely low levels of conscientiousness, emotional stability, agreeableness, extraversion, and openness to experience (Kaiser et al., 2015). Thus, the most effective leaders fall within sweet-spots along the trait continuum; leaders on the fringe are subject to derailment.

Perhaps the most disturbing aspect about these dark side characteristics are that they are hard to detect, as these leaders can often have extraordinary social or impression management skills (Hogan & Kaiser, 2005). The derailment literature sheds much needed light on characteristics that can lead to toxic leadership and supports the notion that detection is a serious problem. However, some incidents of derailment may not necessarily become toxic; simple negligence and incompetence may not necessarily contribute to a contagion of harmful, anti-subordinate behavior. Thus, it is useful to turn attention toward the more tyrannical view set forth by Ashforth (1987).

Petty Tyranny. Perhaps the first modern, academically rigorous exploration of harmful leader behavior was delivered through work involving tyrannical leadership. Ashforth

(1987, 1994) termed this construct as petty tyranny and defined tyrannical leaders as those who "lord power" over others. The petty tyranny literature centers the toxic leadership phenomenon on both leader and situational characteristics that are linked to the process of applying power over others in negative, counter-productive ways. Ashforth (1994) found four leader-related factors behind the idea of "lording power" over others.

First is the leader's *belief about the organization*. If an organization has a highly bureaucratic environment, and the leader perceives these conditions as appropriate, then behaviors consistent with tyrannical leaders (Table 2) may appear favorable. If leaders are driven to support the firm, and the firm adheres to rigid bureaucratic processes, then leaders may place higher values on conformity and compliance, favoring more dogmatic procedures to influence followers. Furthermore, leaders with a bureaucratic orientation may place much lower values on subordinates, treating them with much less consideration and ignoring their needs.

A reduced consideration for others shares commonality with the second leader factor, which involves a *leader's beliefs about the subordinates* themselves. In particular, when leaders believe subordinates are consistent with McGregor's (1960) Theory X characteristics (e.g. the typical employee despises working), they may feel coercive leadership behaviors are necessary.

Another factor involves the *leaders' beliefs about themselves*. Leaders with low self-efficacy and poor self-confidence may feel as though followers will ignore their gentle requests; thus, they are more likely to embrace behaviors consistent with gaining and maintaining coercive power (French & Raven, 1959; Yukl, 2006). On the other hand, leaders with unusually high self-esteem may suffer from arrogance and the pursuit of perfection. Thus, Ashforth (1994) suggested that these overconfident and sometimes narcissistic leaders may rely on autocratic

tactics that instill fear in subordinates; deliver self-centered ambitions; and show a severe lack of empathy.

A *leader's preference for action* is a fourth factor behind tyrannical leadership. When leaders hold a strong preference for action, they may enact more directive behaviors to attain their goals. These more directive, results-oriented leaders may also attempt to minimize their dependency on subordinates by pursuing greater power and fulfilling a need to dominate the actions and thoughts of others. When results-oriented leaders also have a low tolerance for ambiguity, they are even more prone to enact dominance behaviors to better control their surroundings and follower performance. Intolerant leaders tend to reduce variations by establishing a stable, rule-governing environment that helps control outcomes and subordinates through a highly rigid work structure.

Ashforth (1994) also proposed two situational factors that contribute to petty tyranny: macro level factors and micro level factors. At the macro level, the norms, values, and even symbols of the organization can encourage dormant tyrannical leaders to rise. In line with trait-activation theory (Tett & Burnett, 2003), the awakening of normatively inappropriate behaviors can occur when certain situational cues are present to activate the negative trait potential inherent within a leader. The structure, spirit, and overall purpose of the organization can send strong behavioral signals regarding appropriate levels of competitive drive, power distance, control, and tolerance for uncertainty. Micro level factors, such as power and stress, can also spark these behavior-inducing situational cues. Both low and high power conditions for the leader can elicit tyrannical behaviors and, when combined with high stress environments, the interactions among these facilitating conditions and leader dispositions can lead to devastating behavioral consequences. Leaders with extreme self-esteem levels (low or high) may feel helpless or

become easily frustrated with stress, leading to greater activation of tyrannical behaviors to achieve their need-based goals.

Table 2. *Petty Tyranny Factors, Levels, Characteristics & Behaviors (Ashford, 1987, 1994)*

Leader Factors	**Situational Factors**	**Situational Facilitators**	**Trait Activated Tyrannical Behaviors**
Belief about the organization	Macro Level	Symbols Values Norms Structure	*Tolerant Environments:* • Desires control/dominance*+ • Lacks trust, hoards information • Desires recognition+ • Micro-manages*+ followers • Questions follower motives • Establishes scapegoats • Discourages initiative*+
Belief about the subordinates Belief about the themselves Preference for action	Micro Level	Power Levels Stress Levels	*Low Power Situations:* • Uses coercive techniques*+ • Displays self-aggrandizement+ • Creates distance with followers* • Reaffirms legitimacy/control*+ • Belittles others* *High Power Situations:* • Shows power thru corruption*+ • Bestows arbitrary punishments*+ • Attempts to increase self-worth+ • Seeks personal gain+ • Devalues others* • Attributes subordinate success to managerial control*+ *Stress Situations:* • Provides more direct guidance • Treats followers like objects* • Shows a lack of consideration*

Notes: *Reflects a lack of empathy; + Reflects the need for achievement/recognition; *+ Reflects dominance

Ashforth (1994) also recognized the transmittable nature of this toxic phenomenon, describing how in-groups can form around these tyrannical leaders, endorsing and even replicating their corrosive leadership styles. Membership in these formidable in-groups can stretch across entire organizations and manifest as "good-old-boy" networks (Kanter, 1977).

These networks are driven by high-power individuals and often have their own informal social structure, which can pose significant barriers for the less powerful out-group members (Chandler, Kram, & Yip, 2011). Although out-group members are often the targets of tyrannical leaders, Ashforth (1994) suggested that even they can transform, emulating their tyrannical leaders and eventually becoming aggressors themselves. This supports the notion that these leaders are "toxic," spreading a cancerous poison of harmful behaviors within an organization.

Toxic Leadership: The Origins. Following petty tyranny, the term toxic leadership first rose to prominence through Marcia Whicker's 1996 book *Toxic Leaders: When Organisations Go Bad*. Although there is still no commonly accepted standard definition (Green, 2014), Whicker's (1996, 1997) original work provided a fresh perspective on the needs, style characteristics, and motives behind toxic leaders. Whicker (1997) characterized these leaders as those that operate from the lower levels of Maslow's (1943) hierarchy of needs, as they are typically consumed with basic safety and security needs within their work environments. They also have particular traits and personal characteristics that feed their general tendency to favor the type of toxic behaviors (Whicker, 1996) that can contaminate organizations.

These leaders often pursue their own psychological and emotional needs by engaging in war-like tactics to conquer or subdue their enemy (Whicker, 1997). Unfortunately, these leaders find their enemies among their own co-workers, followers, and even superiors. This aggressive, needs-driven approach stimulates a leader's defensive mechanisms, resulting in a perpetual suspicion of, and preparation for, attacks from followers and co-workers. Falling into a state of paranoia, these leaders can perceive threats that do not exist and develop extremely malicious leadership styles (Table 3) that are leveraged to fend off these often fabricated attacks.

According to Whicker (1997), there are four main types of toxic leaders: busybodies, controllers, enforcers, and bullies. Each style has its own unique characteristics, but all share commonality with the basic notion that toxic leaders, in general, are self-centered, inappropriately aggressive, and hold anti-subordinate views. Despite Whicker's (1996, 1997) seminal work, the term toxic leadership stayed relatively dormant while attention shifted to the nearly equivalent concept of abusive supervision (Tepper, 2000). Thus, before expanding on toxic leadership and its scholarly resurrection from within the military domain (described later), it is important to first pay homage to Tepper's (2000, 2007) contributions, albeit under a different term known as abusive supervision.

Table 3. *Mapping of Toxic Leadership Types, Behaviors, and Characteristics (Whicker, 1997)*

Type *(style)*	**Style Specific Behaviors**	**General Toxic Leader Behaviors**
The Busybody *(energetic)*	-Seek attention & affection^{+} -Manipulate opinions*$^{+}$ -Use rumor mongering -Control communications*$^{+}$	*Self-Centered:* • Obsessed with their own psychological safety^{+} • Displays selfish values^{+} • Excessively brags about unfounded achievements^{+} • Seeks opportunities to self-promote^{+} • Constantly compare themselves to others^{+} *Inappropriate Aggression:* • Engages in aggressive posturing, chest-puffing*$^{+}$ • Adopts militaristic, warfare style tactics*$^{+}$ • Tears others down, denigrates followers* *Anti-Subordinate Views:* • Paranoid of attacks from others*$^{+}$ • Views followers (and co-workers) as the enemy* • Uses deception to conceal motives & intentions
The Controller *(perfectionist)*	-Micro-manage*$^{+}$ -Demand obedience*$^{+}$ -Demand attention^{+}	
The Enforcer *(subservient)*	-Emulate toxic superiors: Echo their behaviors Execute their bidding -Seek consensus w/superiors^{+} -Act egotistically^{+} -Dominate through politics*$^{+}$ -Favor gut-level instincts -Grant reward/punishment*$^{+}$ -Share a competitive vision^{+} -Win at any cost^{+}	
The Bully *(commanding)*	-Act angry & pugnacious*$^{+}$ -Appear mad at the world*$^{+}$ -Jealous when outperformed^{+} -Driven to invalidate others* -Denigrate followers* -Inappropriate outbursts	

Notes: *Reflects a lack of empathy; $^{+}$ Reflects the need for achievement/recognition; *$^{+}$ Reflects dominance

Abusive Supervision. According to the groundbreaking work by Tepper (2000), abusive supervision is defined as *"subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact"* (p. 178). This particular definition touches on a key characteristic: the notion that leader-follower relationships are patterned (Carter et al., 2015). If a sustained display of hostile acts is a defining feature, then abusive supervision is a process and not necessarily determined by any singular episode of harsh treatment. Although this boundary lives on a continuum (e.g. how many incidents constitute a sustained display?), it is reasonable to eliminate one-off meltdowns from otherwise good leaders and stick to incident patterns that better reflect an abusive, anti-subordinate process. These patterns of perceived hostile conduct may, or may not, be common across followers, as different processes and relationships can characterize each unique leader-follower dyad (Graen & Uhl-Bien, 1995).

Tepper's (2000, 2007) work on abusive supervision should garner high accolades. Not only did he synthesize a fractured set of related literature and provide a useful reference for future work,[2] but he also identified antecedents and outcomes associated with toxic leadership. Through a much needed review, Tepper (2007) argued that both conceptual overlap and distinctiveness exist among various studies capturing "nonphysical supervisor hostility." The review included studies involving *supervisor undermining* (Duffy et al., 2002), *supervisor aggression* (Schat, Desmarais, & Kelloway, 2006), *workplace bullying* (Hoel & Cooper, 2001), and *victimization* (Aquino, 2000). Although no empirical evidence was provided to demonstrate the distinctiveness among the related constructs (Shaffer, DeGeest, & Li, 2016), this early

[2] Abusive supervision generated 62 follow up studies published in peer-reviewed journals from 2008-2012 (Martinko et al., 2013) and, as of November 2017, Consequences of Abusive Supervision (Tepper, 2000) and Abusive Supervision in Work Organizations: Review, Synthesis, and Research Agenda (Tepper, 2007) have accumulated over 3,200 citations.

integration effort was a noble attempt to kick-start alignment efforts and disrupt the early stages of construct proliferation (Harter & Schmidt, 2008). In short, the abusive supervision model was an influential step towards an integrative theory that describes leaders that systematically employ harmfully abusive anti-subordinate behaviors. Unfortunately, concerns regarding the original conceptualization of abusive supervision continue to surface. Specifically, scholars have addressed limitations in terms of theoretical alternatives to subordinate perceptions and the exclusion of physical bullying (Martinko, Harvey, Brees, & Mackey, 2013).

Perceptions. Tepper's (2000) definition centers on subordinate perceptions of the supervisor and is remarkably consistent with Katz and Khan's (1978) popular notion that, *"without followers there can be no leader"* (p. 527). These elements are important to understanding this construct, as the relational aspect is a key characteristic of any leadership style (Carter et al., 2015). Obviously, if nobody is around to follow a potentially harmful leader, then no targets are available for the aggressor to abuse. The relational aspect is a core component of any leader member exchange process and the notion that leadership operates on three different levels: the leader, the follower, and the leader-follower relationship (Graen & Uhl-Bien, 1995).

Since the quality of each dyadic relationship is tightly hinged to perceptions, we can also account for follower perceptions to understand when they actually consider themselves a target of an abusive leader. Thus, subordinate perceptions could help resolve problems with detection. It is important to note, however, that it remains unclear whether perceptions are truly a dependable boundary condition for determining whether or not leadership is actually toxic. For instance, perceptions can be dubious when reverse causation is at play. Followers can

improperly blame "abusive" leaders for their own poor performance or directly cause the leader's harmful behavior (Martinko et al., 2013) through their own shortfalls.

Furthermore, tolerant organizations and permissive cultural environments may also lead to perceptions of normality among followers when aggressive, self-centered, and anti-subordinate behavior is commonly exhibited. In more accepting cultures, grossly exaggerated behaviors may be required for perceptions of toxicity to surface. Addressing this concern, Ashforth (1987) proposed that in order to identify these harmful leaders, it may be wise to earmark those that score one standard deviation from the mean on any given detection measure. Identifying these abnormalities is important, as they may show deviations from what may be considered normatively appropriate behavior within any given context.

However, it is problematic to assume that systematic displays of aggressive and unsympathetic behaviors are suddenly not harmful simply because the targets fail to perceive them as hostile. Given Hoobler & Brass's (2006) findings that targets can emulate their abusive supervisors and unwittingly transmit aggressive actions onto family members, displaced aggression could have distal negative outcomes regardless of any conscious awareness. Furthermore, a leader's ability to undermine and employ Machiavellian behaviors can be quite cunning, going undetected as they use deceit and political posturing to harm others. Frankly, this "back-biting" (Flynn, 1999) technique contributes to the crux of the problem; toxic leaders are often skillful manipulators and not always transparent to those around them. In sum, perceptions can be sufficient for identification, but not necessary for toxic leadership to exist.

Situations. Relatedly, one might argue that conceptualizing this construct according to Tepper's (2000) definition does not fully account for the situational context (Fiedler, 1967). The substantive nature of a leader's behavior can help followers differentiate between abusive

and non-abusive experiences. Followers may feel that a leader's conduct is deserving given certain follower provocations; necessitated by extreme situational demands; or perfectly acceptable given cultural norms. Although Tepper (2000) acknowledges that behavioral interpretations may differ by context, and suggests that individuals' subjective assessments will account for contextual differences, there is no explicit reference to context within the proposed definition. As highlighted previously, the macro and micro factors of petty tyranny (Ashforth, 1994, 1997) seem to offer a deeper conceptualization of the multi-level situational conditions.

Motives. The abusive supervision definition does not clearly prescribe anything regarding leader motives. The leader's motives, combined with situationally driven goals, can impact whether or not the behaviors are harmful. Behaviors motivated purely by self-interest and/or a general disdain for subordinates are easy to categorize as harmful. However, these interpretations can be clouded, especially if the motives are hinged to the safety and welfare of others. To better clarify the importance of leader motives, consider the following examples:

Motive Example 1 (self-interest): *Every time a fuel report is due, a fuel terminal supervisor repeatedly screams expletives so followers quickly gauge the tanks and turn-in the necessary documentation.*

Motive Example 2 (safety): *Every time the incoming mortar siren is triggered, the platoon leader repeatedly screams expletives so followers quickly run to covered bunkers.*

These two examples consist of identical leader behaviors, screaming expletives to achieve rapid results, but under different conditions and for two very different motives. The first example shows a motive based more on self-interest, and could occur when a leader's need for achievement outweighs subordinate concerns. Followers in the safety motive condition will

probably not perceive the screaming as hostile, but even if they do, are they right? It is quite reasonable to argue…no! On the other hand, some leaders may consider toxic leadership behaviors effective for enforcing high standards, inspiring excellent performance, and developing their subordinates. The motive for these leaders is to improve performance and development, but problems arise when the needs of the leader and organization are disproportionally favored over the welfare of followers.

Tepper (2007) later helped clarify the motives shortfall by acknowledging that intended outcomes are not part of the abusive leader definition and that hostile behaviors may be employed without the specific intention to harm subordinates. This key distinction is not inconsequential, as the idea of whether a behavior is volitional or enacted to specifically harm others has clouded research on counterproductive work behavior, where multiple factors (Spector & Fox, 2005) and categories (Gruys & Sackett, 2003) have been proposed to characterize the phenomenon. In sum, the literature seems abundantly clear; although motives matter, harmful leader behaviors can arise regardless of intent.

Physical Contact. Lastly, Tepper's (2000) definition explicitly omits physical contact, distinguishing it from non-hostile and non-verbal behaviors. Although it is important to acknowledge that excluding physical hostilities helps separate harmful leadership from general forms of workplace violence, this restriction also eliminates some of the most harmful leaders, those that use physical violence and commit sexual assault. Einarsen et al. (2007) addressed this concern within their conceptual framework, categorizing both physical and verbal behavior as destructive leadership characteristics. This is a logical position, since non-physical attempts to intimidate or bully subordinates could naturally escalate into physical contact. When leaders feel desperate and ineffective, they may feel that physical means are necessary to "lord power"

(Ashforth, 1994) over others and satisfy their need for dominance. The idea of unethical leaders using physical violence as a last resort is consistent with Kellerman's (2004) notion that negative leader behaviors reside on a continuum, ranging from simple incompetence to extremely evil tendencies. Physically aggressive acts can also accompany bullying and, since 80-89% of workplace bullying has been attributed to leaders (Zapf, Einsaren, Hoel, & Vartia, 2003; Namie & Namie, 2000; Einsaren et al., 2007), physical abuse may be more common than we might instinctively presume[3]. Undoubtedly, these types of dominating physical behaviors are harmful and associated with extremely negative outcomes. Thus, leaders engaging in any type of physical abuse could be the most devastating form of toxic leadership. This aspect was included in studies under the term destructive leadership, a specific stream of research with high commonality with abusive supervision.

Abusive Supervision from a "Destructive" Point of View. As mentioned previously, both situational factors (Ashforth, 1994) and followers (Tepper, 2000) play important roles in toxic leadership. Padilla et al. (2007) expanded on these ideas, showing how the negative outcomes associated with what they called "destructive leadership" are actually a result from a toxic triangle that includes destructive leaders, susceptible followers, and permissive environments. Padilla et al. (2007) seem to use the toxic and destructive terms interchangeably and the elements within their three domains (Table 4) are relevant to toxic leadership. Their decision to apply the label of "destructive" leadership was intentional, as the authors wanted to emphasize the long-term damaging consequences produced by the toxic triangle. However, this conceptualization positions this phenomenon as an outcome, which departs from the process-oriented descriptions offered by the typical toxic leadership and abusive supervision

[3] The idea that workplace aggression and violence are interchangeable is considered a myth, as typically only ~1-5% of employees have reported experiencing violence at work (Barling, Dupre, & Kelloway, 2009).

characterizations. This has led to increased confusion among the literature, as other proposed definitions of destructive leadership are incongruent regarding the process versus outcome issue.

Krasikova et al. (2013) argued that the harmful behavior associated with destructive leadership is actually embedded within the process of leading; therefore, it is not simply a reflection of negative outcomes. Instead, these authors suggest an alternative definition (again, see Table 1), which is very comparable to counterproductive work behaviors, especially in terms of volitional behavior and harmful intent. Despite the conflicting views and close commonality with abusive supervision and toxic leadership, there are important features described under the umbrella of destructive leadership that are worth noting.

Specifically, Padilla et al. (2007) suggested the following: both positive and negative aspects are associated with destructive leaders; dominance, coercion, and manipulation are typically favored over persuasion or commitment; and leader needs are often prioritized over group needs. These characterizations suggest that these leaders are hard to detect, seek to dominate others, and care more about goal-relevant needs than they do for their followers. Moreover, the toxic triangle concept better recognizes the dynamic nature of this phenomenon. Salient and disruptive events, such as toxic leadership, can emerge at and among various levels within an organizational structure, impacting individuals, organizations, and the surrounding environment (Morgeson, Mitchell, & Liu, 2015). Thus, these leaders can change individual and collective behavior over time and play an influential role in other subsequent events (Morgeson et al., 2015). This type of organizational dynamism is perhaps best observed within military cultures, where follower values and environmental conditions can sometimes allow toxic leaders to emerge and thrive (Reed, 2004; Gallus, et al., 2013). Consequently, the recent compendium on

toxic leadership derived from military research may provide the most comprehensive insight into the construct.

Table 4. *Toxic Triangle Elements (Padilla et al., 2007; Lindsay, Watola, & Lovelace, 2016)*

Leaders	Followers	Environments
Skill/Experience (e.g. charisma^{+})	*Those that conform to the leader:*	Unstable conditions
Interest (e.g. power*$^{+}$)	Ability (Immature)	Perceptions of high risk/threat
Personality (e.g. narcissism^{+})	Beliefs (e.g. poor core self-evaluations)	Permissive cultural values
Beliefs (e.g. hateful ideology*)	Motivation (e.g. Unmet needs)	Limited checks and balances
		Substandard organizations
	Those that collude with the leader:	
	Motivation (e.g. Ambition)	
	Leader Commonality (e.g. beliefs/values)	

Notes: *Reflects a lack of empathy; $^{+}$ Reflects the need for achievement/recognition; *$^{+}$ Reflects dominance

The Great Awakening: *A Re-emergence of Research on Toxic Leadership*

Given the fragmented, yet overlapping research streams highlighted in the previous theoretical review, it is no wonder that even the experts face difficulties defining, conceptualizing, and detecting toxic leadership (Vreja et al., 2016). However, recent developments and renewed interest in toxic leadership have provided much greater insight into this elusive construct. In fact, literature stemming from Whicker's (1996) original characterization of toxic leadership has been greatly expanded, primarily through the renewed interest within the military domain. This resurgence of military-related research primarily occurred during the post-9/11 era, as prolonged conflicts and repetitive combat deployments have placed an abnormally heavy burden on both military officers and their soldiers.

While our military organizations have realized tremendous success combating terrorist cells and rogue regimes, a perceived rise in toxic leadership may be a long-term consequence of these arduous conditions. This is not to suggest that toxic leadership was not found among the ranks before 2001; certainly, history is littered with leaders that many might

classify as toxic (e.g. Herbert Sobel). Toxic leaders are also found in all types of organizations and are far from unique to military ranks. However, after 17 continuous years conducting combat operations, there does seem to be a greater appreciation for the problem and a renewed awakening to its harmful effects. The long term ramifications associated with prolonged conflicts, such as high turnover rates and reports of post-traumatic stress disorder, have encouraged senior military leaders to closely examine the potential processes driving these negative outcomes. The byproducts of these military reviews and technical reports have sparked a greater awareness of toxic leadership and unique insights into its pestilential characteristics.

Perhaps the most notable contribution to this "great awakening" was an essay authored in 2004 by Colonel George Reed. Succinctly capturing the anecdotal results of senior leader interviews, Reed (2004) summarized these reports into three important elements of toxic leadership: a lack of concern for subordinates, a negative personality or relational approach, and a motivation driven by self-interest. This essay resonated most among younger officers (Reed & Olsen, 2010) and was followed by a series of follow-up studies (e.g., Reed & Bullis, 2009; Steele, 2010; Gallus et al., 2013) on toxic leadership within the military. The clear indication among these different publications is that toxic leaders seem to have an abnormally low appreciation for their followers (low empathy) and a high-need to immediately satisfy their own self-interests (need for achievement recognition).

These characterizations were being replicated outside of the military as well, including literary pieces from the business and management disciplines (Reed, 2004). Specifically, *The Allure of Toxic Leaders* by Lipman-Blumen (2005) and *The No Asshole Rule* by Sutton (2007) showed that toxic leadership has become disturbingly common, even within the more benign non-military environments. Regardless of origin, strong support was found for

these particular characteristics in Steele's (2010) two year review on the antecedents and consequences of toxic leadership. Steele (2010) summarized the observed behavioral consistencies of this construct (Table 5) and described how toxic leaders "*work to promote themselves at the expense of their subordinates and usually do so without considering long-term ramifications (p. 3).*"

Table 5. *Toxic Leader Behavioral Consistencies, Characteristics, & Outcomes (Steele, 2010)*

Common Indicators	**Toxic Behaviors**	**Outcomes**
Need for Achievement Recognition^{+}*:* -Showing motivation through self-interests -Focused on visible short-term achievements -Providing superiors w/impeccable products -Responding enthusiastically to all directives -Acting in a self-serving, arrogant manner	*Egoistic Dominance**$^{+}$*:* -Using dominance, coercion, & manipulation -Acting aggressively toward others -Hoarding information and tasks -Blaming others for problems or mistakes -Overly criticizing good work -Intimidating and denigrating others -Ignoring employee morale and/or climate -Avoiding Subordinates	*Subordinate Reactions:* -Staying task focused -Confronting toxic leaders -Avoiding toxic leaders *Other Outcomes:* -Honest mistakes penalized* -Creative ideas and honest communication stifled*$^{+}$ -Problems solved at the surface level^{+} -Time wasted and morale reduced*$^{+}$

Notes: *Reflects a lack of empathy; $^{+}$ Reflects the need for achievement/recognition; *$^{+}$ Reflects dominance

The Domains Indicative of a Toxic Leader

Upon review of Steele's (2010) exemplary work, along with the scholarly evolution of this dangerous construct, the behavioral consistencies of toxic leaders seem to align with three underlying dimensions: the *need for achievement recognition (NAR), empathy*, and *egoistic dominance*. Regardless of the various naming conventions and research streams, these three domains are a common thread in the literature and fundamental to the toxic leadership phenomenon. From King David's accounts, to the military awakening of toxic leadership, behaviors reflecting egoistic dominance, achievement-based needs, and low empathy are a clear

focal point. Thus, understanding the association among these domains can help build accurate, parsimonious, and practical detection methods that provide a broad coverage of toxic leadership.

Need for Achievement Recognition. The need for achievement alone is not necessarily a red flag in terms of toxic leadership, as it is typically a core motivation for many highly successful leaders. The implicit need for achievement, particularly with regard to the intrinsic reward of successfully influencing and impacting subordinates, is one fundamental difference between leaders and non-leaders (James & LeBreton, 2012). However, the toxic danger arises when the leader's motivation is extrinsic and oriented toward a specific and abnormally intense longing for achievement *recognition.* These leaders are primarily driven by self-interest, tending to care most about "looking good" among various sources and earning higher status or prestige. When this need for achievement motive is misplaced, it can lead to the unhealthy interpersonal conduct associated with "getting ahead" of others (Hogan & Holland, 2003) and the manifestation of malevolent narcissistic behaviors (Bognar, 2014)[4]. It is easy to comprehend how extremely high cravings for individual accolades can overtake leaders and push them to enthusiastically accept ever-increasing workloads; focus only on near-term accomplishments; and expend an exuberant amount of resources to employ skillful impression management strategies.

Empathy. Another important aspect to toxic leadership, which is implied from the type of egoistic behaviors listed in Table 5, is an extreme lack of empathy. Empathy is considered a core component of emotional intelligence (Salovey & Mayer, 1990; Kellet, Humprhey, & Sleeth, 2002) and is neatly defined by Salovey and Mayer (1990, p.194) as the *"ability to comprehend another's feelings and to re-experience them oneself."* The notion that

[4]Subclinical malevolent narcissism is characterized as a set of behavioral patterns reflecting a need for admiration, grandiosity, entitlement, and superiority (Paulhus & Williams, 2007; Bognar, 2014).

toxic leaders are ignorant to employee sentiments and often view human capital as disposable tools (Steele, 2010) shows a disturbingly low level of empathy. Holding insensitive views can obviously disrupt a leader's inclination to practice individualized consideration, an important factor of transformational leadership that is important to effectiveness (Avolio & Bass, 1995). Poorly empathetic leaders will neither genuinely consider individual needs, nor listen attentively to followers, nor employ proper mentoring techniques for those around them. Toxic leaders show weakness in empathy through their willingness to chastise and micro-manage employees; failure to see subordinate perspectives; and aggressive attempts to impose their will on others. Logically, a lack of concern for employees could have a strong negative impact on effective work behavior, open communication, developmental opportunities, subordinate motivation, and the ability to properly deal with stress and adversity. Again, these actions are often the result of an overzealous achievement-orientation and a focus on bottom-line results at the expense of subordinate welfare. Thus, without appropriate levels of empathy, it is easy for leaders to place their personal ambitions above the welfare of their subordinates. This type of prioritization is characteristic of egoistic dominance, an important personality dimension that drives behavioral patterns nearly synonymous with toxic leadership.

Egoistic Dominance. In addition to placing personal ambitions above group welfare, leaders high in egoistic dominance tend to influence followers through harsh means, which are often counterproductive to organizational goals and harmful to people around them (James & LeBreton, 2012). James & LeBreton (2012) offered that leaders high in egoistic dominance are more calculative decision-makers and have an intense passion for personal power. These tendencies can lead to increasingly dominant behavior, especially as the leader pursues "winning" strategies that increase their control and enhance perceptions of strength and power.

Leaders high on egoistic dominance despise the appearance of weakness and will not hesitate to employ toxic, even unethical behaviors to achieve their goals and maintain their power positions (James, LeBreton, Mitchell, Smith, Desimone, Cookson, & Lee, 2013; James & LeBreton, 2012; Kellerman, 2004; Resick, Whitman, Weingarden, & Hiller, 2009). The targets of a leader's egoistic dominance are often left feeling humiliated, oppressed, and/or belittled (Sutton, 2007), allowing the leader to maintain his high-power status. This is also reminiscent of work on the negative aspects of mentoring, where the dyadic relationships between experienced leaders and their protégés can become extremely dysfunctional (Eby, Butts, Lockwood, & Simon, 2004; Chandler et al., 2011).

According to arguments stemming from evolutionary theory and natural selection (Darwin, 1859; Dawkins, 2006; Dennett, 1996), dominance behaviors, such as those consistent with toxic leadership (Whicker, 1997; Steele, 2010) are simply adaptations to environmental stimuli (Vreja et al., 2016). Following basic human survival instincts, these ego-driven leaders attempt to gain or maintain high-status within their social environments. The pursuit of status and power within a social hierarchy allows dominant individuals to maintain their position over other group members, ultimately ensuring evolutionary survival. These basic, lower-level needs (Whicker, 1997; Maslow, 1943) can be met through intimidation, threatening behaviors, rudeness, physical force, or simply upholding an imposing appearance (Vreja et al., 2016; Henrich, 2016). From an emotional perspective, dominant individuals can also be arrogant, manipulative, and quick to assume they are the primary factor of survival or success (Henrich, 2016; Vreja et al., 2016). Interestingly, individuals gaining and maintaining the dominance position can also have prominent or imposing physical characteristics that generate fear or submissiveness from other group members.

Given this striking linkage between evolutionary psychology and egoistic dominance, it should be no surprise that toxic leaders can be found in all aspects of social life (Lipman-Blumen, 2005) and that over 20% of leaders can manifest these harmful behaviors (Vreja et al., 2016). Thus, detecting leaders that may be predisposed to employing egoistic-dominance behaviors (e.g. low empathy and high need for recognition) is vital to diminishing the presence of toxic leadership from all types of organizations. Furthermore, if dominance is a result of adaptations and survival, then physical features complimentary to the evolutionary process and natural selection must also be considered. In other words, not only might we detect toxic leaders through their behaviors, but perhaps we can also "see" them and infer their propensity to dominate others through physical characteristics.

Hypotheses

The need for achievement recognition (NAR) and egoistic dominance behaviors are highly representative of the toxic leader trends captured throughout the aforementioned theories and descriptions of toxic leadership, although each represent a different underlying driver. Behaviors consistent with the need for achievement recognition reflect a more selfish approach, while the behaviors that emerge from the egoistic dominance domain are themselves toxic. It is also important to note how a gross lack of empathy is also a clear commonality across the fractured literature. Without sufficient levels of empathy, the filter is off and toxic behaviors are free to surface when leaders are driven to achieve their need-based goals. In sum, organizational leaders that lack empathy and possess a high need for achievement recognition are most vulnerable to embracing the extreme egoistic dominance behaviors characteristic of toxic leaders.

Need for Achievement Recognition (NAR)

Leaders driven by self-interest, focusing on short-term objectives, and producing impeccable products do not always employ anti-subordinate behaviors. Therefore, behaviors reflecting the need for achievement recognition indicate, but do not confirm, the presence of toxic leadership. Nonetheless, leaders with a low drive for achievement will likely not care enough about workplace outcomes to really embrace a harshly negative approach with their followers. Thus, it is reasonable to suspect that the drive to be recognized for excellence is an important indicator of behaviors reflecting egoistic dominance and toxic leadership.

Hypothesis 1*: Behaviors reflecting a need for achievement recognition will have a significantly positive relationship with the egoistic dominance behaviors of toxic leaders.*

Empathy

Leaders scoring high on empathy will see things from another's point of view and have a deep appreciation for individual needs and feelings. Therefore, highly empathic leaders would likely have serious reservations about employing overly dominant behaviors to achieve goals. On the other hand, leaders low on empathy would likely justify the use of coercion, manipulation, and other forms of aggressive dominance, especially if they perceived these intimidating methods as effective at achieving organizational or personal goals. Thus, it is prudent to examine the following relationship:

Hypothesis 2: *Behaviors that reflect empathy will have a significantly negative relationship with the egoistic dominance behaviors of toxic leaders.*

Egoistic Dominance

Capitalizing again on the insights provided by Steele (2011), toxic leaders consistently employ coercion, manipulation, and other cunning behaviors consistent with Machiavellianism. They also tend to aggressively denigrate followers and often hoard tasks and information while unnecessarily criticizing good work. When toxic leaders finally encounter problems or failure, they are quick to assign blame to divert perceptions of weakness. These patterns of conduct are remarkably similar to those that characterize the egoistic dominance domain (James, et al., 2013; James & LeBreton, 2012). Consequently, behaviors consistent with high egoistic dominance are virtually identical to the core toxic leader behaviors described in the aforementioned theories

(e.g. Ashforth, 1994; Whicker, 1997; Tepper, 2000) and subordinate observations of these extreme dominating behaviors are themselves the red flags signaling toxic leadership. This distinction is important, as the presence of more benign dominance behaviors could be perceived as strength and power instead of a cancerous condition with numerous adverse side-effects. However, an "ego gone wild" condition is created when the empathetic filter is removed from leaders that thrive on distinct accolades for their achievements and are motivated to pursue their own self-interests. This unfiltered situation allows leaders to embrace the overly aggressive and anti-subordinate behaviors that are characteristic of toxic leadership.

Hypothesis 3: *Behaviors reflecting low empathy and a high on need for achievement recognition will significantly predict the egoistic dominance behaviors commonly employed by toxic leaders.*

Evolutionary Perspectives of Dominance: *Can we see toxic leaders?*

Since the need for dominance can be traced back to evolutionary underpinnings and natural selection, it is reasonable to ponder how human instincts and physical appearance contribute to leader perceptions. Even the simplest trait differences, such as height, have been shown to correlate with promotions and earnings across a 30-year career (Judge & Cable, 2004). Using more specific features, such as facial cues, is also not new. Many researchers have used "face-ism" to make important inferences regarding leadership (Olivola, Funk, & Todorov, 2014; Antonakis & Eubanks, 2017) and using facial cues to make heuristic judgements about leaders may simply be part of our adaptive evolutionary processes (Antonakis & Eubanks, 2017). Research has shown how facial features can be used to predict a wide range of outcomes, including elections (Antonakis & Dalgas, 2009); leader success (Linke, Saribay, & Kleisner,

2016); physical strength (Sell, Cosmides, Tooby, Sznycer, von Rueden & Gurven, 2009); and income (Graham, Harvey, & Puri, 2016).

The literature regarding facial heuristics is growing (Olivola, Eubanks, & Lovelace, 2014), but typically focuses on uncovering effectiveness, emergence, and follower preferences (Van Vugt & Grabo, 2015) regarding a leader's physical characteristics. If a leader's appearance has a predictive relationship with positive outcomes, then facial features may also correlate with negative aspects of leadership. Followers have already shown a preference for leaders with dominant, masculine looking faces in times of war and conflict (Van Vugt & Grabo, 2015); thus humans do have some capability of "seeing" dominant and competent individuals.

However, these same characteristics of strength and competence may also generate important perceptions regarding a leader's propensity to employ behaviors indicative of toxic leadership. In other words, toxic leaders may possess distinctive facial characteristics that play important roles in detection. A leader with a clearly masculine appearance and obvious projection of physical dominance (e.g. prominent jaw lines and muscular facial structures) could be perceived as a threat, especially in comparison to softer, more feminine facial cues. Even if their behavior is benign, leaders that are physically imposing may activate a hostile attribution bias from their followers (Hoobler & Brass, 2006), inducing a subjective assessment of toxic behavior and potentially leading to a self-fulfilling prophecy. Since leaders with a dominant and competent image are also seen as effective (Olivola, Eubanks, & Lovelace, 2017), they may also be perceived as having a higher need for achievement.

Hypothesis 4a: *Followers will perceive leaders with masculine facial structures as significantly more likely to employ egoistic dominance behaviors over leaders with feminine structures.*

***Hypothesis 4b**: Followers will perceive leaders with masculine facial structures as having a significantly higher need for achievement recognition over leaders with feminine structures.*

***Hypothesis 4c:** Followers will perceive leaders with masculine facial structures as significantly less empathetic than leaders with feminine structures.*

Literature regarding the role of gender bias in assessments of manager derailment potential (e.g. Bono Braddy, Liu, Gilbert, Fleenor, Quast & Center, 2017) suggests that ineffective interpersonal behaviors are less common among females, but more damaging when they do exist. Bono et al. (2017) suggested that ineffective interpersonal styles are an important indicator of poor leadership, especially for women that appear to violate communal stereotypes associated with gender. Furthermore, followers may evaluate female strength and competence as a threat to the traditional, male-dominated gender hierarchy (Inesi & Cable, 2014). Thus, stereotype-based bias may impact follower judgment regarding female leaders and their propensity to engage in toxic behaviors. Females with masculine characteristics can violate appearance stereotypes and may be perceived as even more threatening than male leaders projecting a similar image of masculinity and strength. These gender threats may also introduce bias as followers judge the levels of empathy and need for achievement for female leaders. However, these effects are not expected when comparing male and female leaders with the same feminine appearance, as there should be no obvious threats to traditional gender hierarchies.

***Hypothesis 5a**: Followers will perceive female leaders with masculine facial structures as significantly more likely to employ egoistic dominance behaviors over male leaders with masculine facial structures.*

***Hypothesis 5b**: Followers will perceive female leaders with masculine facial structures as having a significantly higher need for achievement recognition over male leaders with masculine facial structures.*

***Hypothesis 5c**: Followers will perceive female leaders with masculine facial structures as significantly less empathetic than male leaders with masculine facial structures.*

Method

Participants

Data was collected over the internet using Amazon's Mechanical Turk (MTurk) to recruit participants, which were eligible for compensation if all quality assurance checks are passed and proper MTurk guidelines are followed. Assessing the dimensionality of the 3 factor scale, assuming a minimum of 4 indicator variables per factor, would require estimates of a model with 51 degrees of freedom. Using MacCallum, Browne, and Sugawara's (1996) power estimate tables, a minimum required sample size of 300 was deemed necessary for producing a power level over 80% for tests of close fitting models (Study 1). Assuming an effect size of ~.2 and a different method of data analysis for study 2, an estimate of 200 participants were needed for detecting significant perception differences among the various facial stimuli. Thus, the participant size required to assess scale dimensionality drove the target sample size for both studies. Since all individuals were exposed to various types of leaders (e.g. supervisors, coaches, and teachers) even before reaching college age, sampling from MTurk was deemed appropriate to represent a follower population. Evidence shows that MTurk is an acceptable tool for data collection (Landers & Behrend, 2015), especially when measures are taken to avoid the inclusion of careless responders. Thus, prior to any analytical calculations, procedures were implemented to ensure data was not included from participants who fail to complete the study, spend less than a realistic amount of times participating in the study, fail any of the quality assurance checks, or repeatedly take the survey. Of the 402 responses received, 45 participants either failed the

attention checks and/or indicated that they personally knew the leaders depicted in the survey images. Thus, a total of 357 participants were retained for data analysis.

Design

This research initiative contained two distinct studies: development of a threat detection scale (Study 1) and assessing threatening perceptions derived from leader images (Study 2). ***Study 1*** involved a scale development and validation process, including item generation and review by subject matter experts, a pilot to assess internal consistency of the items, and administration of the final form and evaluation of the relationships among the proposed domains of toxic leadership. ***Study 2*** involved the initial selection of facial images and screening by subject matter experts to ensure accurate representation of intended facial structure (masculine or feminine), followed by a pilot study, and then a final presentation of portraits to examine the response trends associated with perceptions relevant to toxic leadership.

Study 1: Threat Detection Scale. The primary thrust of this study was to obtain numerical ratings of leader behaviors, from a follower perspective, to understand the relationship between the proposed domains (need for achievement recognition & empathy) believed indicative of toxic leadership (egoistic dominance behaviors). Although other scales have been produced in the past, they are often time-intensive and contain obvious items that are highly susceptible to response distortion. Thus, the plan was to assess reliability and validity of a toxic leader detection scale that was constructed with the most relevant, yet least transparent items reflecting the need for achievement recognition and empathy. Minimizing awareness of the intent of the measure is important when followers are unwilling to respond accurately (Uhlmann, Leavitt, Menges, Koopman, Howe, & Johnson, 2012), which is a reasonable assumption for individuals serving under the reign of a toxic leader. Thus, a parsimonious scale with ambiguous

items will save time and increase utility, as organizations can implement the measure quickly and with less concern for follower bias or fear of reprisal from those identified as toxic.

Study 2: Facial Perceptions. Since toxic leadership is relational, understanding how physical traits associated with evolutionary dominance can induce perceptions of toxic leadership is also important. Therefore, the second segment of this study was intended to examine whether a leader's physical characteristics can influence follower perceptions of toxic leadership. Using "face-ism" techniques (Antonakis & Eubanks, 2017), participants were presented binary sets of leader images intended to reflect both masculine and feminine facial structures. Participants were directed to select the leader image which best matches the cue-inducing prompts. Although the results of Study 2 were not intended to show an empirical link between the detection scale and the facial stimuli, it was included to provide unique conceptual support for the proposed domains indicative of toxic leadership. This approach helps avoid the utilization of a singular tool for examining toxic leadership and helps pair two different approaches for studying the phenomenon, thus avoiding justifiable criticisms that have been made regarding the singular nature of traditional research initiatives on leadership (Hunter, Bedell-Avers, & Mumford, 2007).

Procedures

Study 1: Detection Scale Development. Using the operational definition of toxic leadership adopted for this study, potential scale items were identified and pooled from previous studies, technical reports, and theoretical reviews on toxic leadership and its related constructs (Appendices A-C). After a review of the literature and previous measures, items were consolidated and categorized according to how well they represent one of the three core domains indicative of toxic leadership (Need for Achievement Recognition, Empathy, & Egoistic

Dominance). Five subject matter experts sorted item pools by construct; any items falling outside of these three particular domains of interest were excluded. Subject matter experts also rated all items (1-4) by their tendency to potentially induce response distortion. Items with the greatest propensity for generating response distortion from followers (e.g. those with obvious intent and/or clear negative connotations) were removed. Results of the SME review produced an initial set of 15 indicators of egoistic dominance, 10 indicators of empathy, and 12 indicators of need for achievement recognition (see bolded items and SME scores in Appendices A-C).

Final scale items consisted of specific behavioral statements with scoring options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The initial scale (Appendices D-F), which included all items passing the initial screening process, was pretested during the pilot. The goal was to start with at least twice as many items that are intended for the final scale (Cascio & Aguinis, 2005), thus 10-15 items per domain were included in the pilot study. The following three prompts were used to initiate responses on the survey:

Prompt 1: *My current (or most recent) supervisor/leader was genuinely able to…*

Prompt 2: *The following statements accurately describe my current (or most recent) supervisor/leader:*

Prompt 3: *My current (or most recent) supervisor/leader…*

Study 1: Detection Scale Pilot. MTurk respondents were included in the pilot, which was administered in a Qualtrics survey format. In using self-reports to collect the data, it was assumed that respondents would know the information requested and that they would also provide truthful answers (Spector & Eatough, 2013). These assumptions were deemed reasonable, since there was no right or wrong answer, the scale was not administered within the

work environment, and results were not being shared with any organizational leadership. Since this study was for research purposes only, response distortion due to social desirability or faking was assumed extremely low. However, there was still a potential for aberrant responses among MTurk respondents. Thus, the pilot (and final form) included items to identify random response patterns (e.g. *"Select option B for this item"*). An incentive of $1.50 was included to increase response rates and the instructions included warnings consistent with MTurk's policy, including warnings and ramifications for improper completion of the questionnaire. Participants that failed an attention check during the pilot, and during final data collection, were rejected according to MTurk's user policy and did not receive compensation.

After the pilot was administered, discriminability and internal consistency among the items and their associated constructs were assessed using Cronbach's Alpha and item-total correlations. The plan to assess internal consistency was to review each indicator for desirable correlations between each item score and test score. The goal was to retain indicators with item-total correlations > .5 (Kline, 2005) and to automatically remove any items below .3 (Nunnally & Bernstein, 1994). Although there is no clear cutoff for internal consistency, reliability estimates > .70 were deemed sufficient due to the novelty and timeliness of this research (Nunnally, 1978). After reviewing internal consistency among the scale items, assessments of dimensionality for each subscale and the full scale were analyzed using exploratory factor analysis (EFA).

Given these newly compiled scale items and the smaller sample size projected, launching directly into a confirmatory factor analysis to assess the pilot data was somewhat presumptuous. Thus, the EFA (using SPSS Version 24) was performed to extract the quantity of latent constructs behind the pattern of correlations within each subscale separately. Iterated principle axis factoring analysis was the preferred method; since, it is generally more accurate than the

non-iterated approach and can be more effective than the maximum likelihood method if weak common factors exist among the data (Fabrigar & Wegener, 2012). Initial communalities for the EFA were estimated by computing the squared multiple correlations (SMC) of the indicator variables and were subsequently used to obtain the reduced correlations matrix. Once convergence on a solution was achieved, the number of factors that represented the data was determined by interpreting the scree plots and eigenvalues, the variance accounted for by each extracted factor, and the pattern matrices produced from the oblique factor solutions (Coovert & McNelis, 1988). Correlations among the factors were anticipated, so oblique rotations were selected to ease interpretability of the findings. Once the structure and alignment of the indicator variables were determined for each subscale (empathy, NAR, and egoistic dominance), the same EFA procedures were then used to run a preliminary analysis of dimensionality on the full scale. After considering the results of the item analysis and EFA, the detection scales and format were finalized.

Study 1: Detection Scale Validation. Once the pilot was complete and the final form was created, the survey was administered on MTurk. Although 2 weeks were allocated for data collection, the survey was closed after 5 days once the total sample size exceeded 300. Again, using Cronbach's Alpha, reliability was determined by assessing internal consistency for each of the subscales (empathy and need for achievement recognition) and among the manifest variables associated with the criterion (egoistic dominance). Confirmatory factor analysis (CFA) was used to assess the dimensionality of the scale and to assess fit of a three factor structural model. Convergent and discriminant validity (Table 6) was also assessed between the threat detection subscales and items reflecting the courtesy and individualized consideration facets on the transformational leadership inventory (e.g. Podsakoff, MacKenzie, Moorman & Fetter, 1990)

and measures of narcissism and self-promotion facets found on previous measures reflecting toxic leadership (e.g. Schmidt, 2008). These alternative measures (Appendices G-H) were not part of the parsimonious detection scale, but included in the final survey to examine construct validity. Finally, a multiple linear regression was used to assess the predictive relationship between the final scale items (empathy and NAR) and the criterion (egoistic dominance); results were cross-validated.

Table 6. *Proposed Alignment for Convergent and Discriminant Validity*

Proposed Subscales	**Previous/Related Subscales**	
	Narcissism & Self-Promotion *(Schmidt, 2008)* **High Performance Expectations** *Podaskoff et al. (1990)*	**Individualized Consideration** *Podaskoff et al. (1990)* **Courtesy** *Podaskoff et al. (1990)*
NAR	***Higher Correlation***	Lower Correlation
Empathy	Lower Correlation	***Higher Correlation***

Study 2: Facial Image Selection. After the initial detection scale was developed, two sets of facial stimuli were then selected for inclusion in the survey: those with distinct masculine facial structures (sharp/muscular features) and those with feminine facial structures (soft/round features). Using publically available portraits of state legislature representatives, six subject matter experts scored a pre-screened set of 24 faces from 1 (extremely feminine) to 4 (extremely masculine) and the aggregate scores for each face were used to categorize the portraits into masculine and feminine categories. The two highest (masculine) and two lowest (feminine) were retained for inclusion in the survey.

Study 2: Facial Stimuli Pilot. As with the detection scale, the facial stimuli were also uploaded into a Qualtrics survey and administered to individuals from the general population. The pilot served to ensure proper formatting, functionality, and to collect response

characteristics. Response characteristics were used to infer whether a greater emphasis on speed or accuracy instructions was needed to induce automatic versus controlled processing (Balota, Yap, Cortese & Watson, 2008). Detecting threats from physical characteristics is normally associated with automatic processes, thus the intent was to get an implicit "gut-reaction" response to each image. Pilot data was used to calculate the mean and standard deviation response time characteristics and the results helped determine whether participants were deliberately or automatically responding. If mean response times were to exceed ~8 seconds per question, then speed (vs accuracy) instructions would help ensure participants were automatically responding to the sets of facial stimuli (see limitations section for justification).

Study 2: Administration of Facial Sets. A randomized block design was used to present each set of portraits to the respondents. Each masculine and feminine facial structure category contained two male and two female representatives; therefore, a total of 8 portrait types were included in the final survey. Although the primary goal was to compare masculine and feminine features, previous research indicates that stereotype threats and gender bias may influence perceptions of leader performance (e.g. Inesi & Cable, 2014; Bono et al., 2017). Therefore, a total of 5 different comparisons (Table 7) were made to assess the main effects for gender and facial structure, along with any interaction effects. The following prompts were used to compare the levels of egoistic dominance, need for achievement recognition, and empathy between each portrait type:

Prompt 1: *Select the leader that would most likely behave aggressively toward others…*

Prompt 2: *Select the leader with the strongest desire to be recognized for their achievements…*

Prompt 3: *Select the leader that cares most about others…*

Table 7. *Hypotheses Comparison Matrix of Facial Stimuli*

IMAGE TYPES	1.	2.	3.
1. Male–Masculine	-		
2. Male-Feminine	H4	-	
3. Female-Masculine	H5	H4	-
4. Female-Feminine	H4	-	H4

Data Analysis

The planned data analysis, summarized in Table 8, consisted of CFA, regression with cross-validation, and a series of 2x2 within subjects design factorial Analyses of Variance (ANOVA). A post-hoc latent profile analysis was also added to explore the scale scores and ascertain any unique response pattern clusters. SPSS (Version 24) was used to perform item analysis and assess reliability of each measured item and to run the planned regression models associated with the threat detection scale. SPSS was also used to run each ANOVA, while MPLUS (Version 7.4) was used for the CFA and the post-hoc latent profile analysis.

Study 1: Threat Detection Scale. All psychometrically sound scale items were identified and retained to obtain the reliability estimates for each scale (empathy, NAR, and egoistic dominance). Procedures followed during the pilot study were again employed to assess discriminability and internal consistency among the items. Items with the highest item-total correlations and greatest factor loadings were retained to ensure the final scale contents produce high reliability estimates. Retained item scores were aggregated into total construct scores and product-moment correlations were reviewed for significance (H1 & H2).

Convergent and discriminant validity of the scale were examined using a multi-trait, multi-method matrix (Campbell & Fiske, 1959), as it was important to show how the domains of toxic leadership were both empirically distinct and related to other similar constructs. As depicted in Table 6, the need for achievement recognition (NAR) subscale was anticipated to

have high correlations with measures of narcissism (Padilla et al., 2007) and self-promotion (Schmidt, 2008), while empathy was projected to have higher correlations with the individualized consideration and courtesy measures from the transformational leadership inventory (Podsakoff et al., 1990). Previous research (Yukl, 2006) reflects conceptual overlap between both empathy and individualized consideration. Thus, examining convergent validity was not only justified, but supported previous calls to further examine the conceptual and empirical overlap between these two related constructs (Sadri, Weber, & Gentry, 2011).

CFA techniques were used to confirm the three factor structure and to formally test the proposed relationships between the factors and the scale's indicator items (H3). Two different CFA models were examined, using maximum likelihood estimation, to determine the most optimal fit among the hypothesized latent constructs of toxic leadership. Fit was assessed for both a dominant single factor model and a three factor structural model. Once ample evidence was available to support construct validity and proper dimensionality of the final scale, the retained item scores were aggregated into total scale scores and analyzed through two multiple regression models (H3) in order to examine the combined relationships between NAR (A), Empathy (B), and Egoistic Dominance (Y) and the potential interaction effects:

$$Egoistic\ Dominance(Y) = Intercept + b_1A - b_2B$$

$$Egoistic\ Dominance(Y) = Intercept + b_1A - b_2B - b_3A*B$$

Study 2: Facial Perceptions. A series of one-way and 2 x 2 factorial Analyses of Variance (ANOVA) were used to detect differences between each of the planned facial stimuli comparisons depicted in Table 7 (H4-H5) and to assess how a leader's image can influence perceptions of egoistic dominance, need for achievement recognition, or empathy. Although there were no specific hypotheses regarding the interaction effects between the gender and facial

structure represented in the images, it was still prudent to test for the moderation. Therefore, the facial stimuli (F) and Gender (G) variables were coded dichotomously and the two-way interactions were assessed with the following linear models:

$$\textit{Need for Achievement Perception}(Y_{ijk}) = \textit{Grand Mean Intercept} + F_j + G_k + (F*G)_{jk} + E_{ijk}$$

$$\textit{Empathy Perception}(Y_{ijk}) = \textit{Grand Mean Intercept} + F_j + G_k + (F*G)_{jk} + E_{ijk}$$

$$\textit{Egoistic Dominance}(Y_{ijk}) = \textit{Grand Mean Intercept} + F_j + G_k + (F*G)_{jk} + E_{ijk}$$

Table 8. *Hypotheses Testing Summary*

	Hypotheses	**Analysis**
H1	Behaviors reflecting NAR will have a significantly positive relationship with the egoistic dominance behaviors of toxic leaders	Product-moment correlation; CFA; Regression
H2	Behaviors that reflect empathy will have a significantly negative relationship with the egoistic dominance behaviors of toxic leaders	
H3	Behaviors reflecting low empathy and NAR will significantly predict the egoistic dominance behaviors commonly employed by toxic leaders	
H4a	Followers will perceive leaders with masculine facial structures as significantly more likely to employ egoistic dominance behaviors over leaders with feminine structures	2x2 Factorial ANOVA
H4b	Followers will perceive leaders with masculine facial structures as having a significantly higher NAR over leaders with feminine structures	
H4c	Followers will perceive leaders with masculine facial structures as significantly less empathetic than leaders with feminine structures	
H5a	Followers will perceive female leaders with masculine facial structures as significantly more likely to employ egoistic dominance behaviors over male leaders with masculine facial structures	One-Way ANOVA
H5b	Followers will perceive female leaders with masculine facial structures as having a significantly higher NAR over male leaders with masculine facial structures	
H5c	Followers will perceive female leaders with masculine facial structures as significantly less empathetic than male leaders with masculine facial structures	

Pilot Results

Pilot Demographics

A total of 68 participant survey responses were received during the pilot. 7 respondents failed the attention checks and another 4 were removed for clear indication of aberrant responding. Thus, the final sample size for the pilot was $n = 57$. These findings are consistent with prior estimates that ~15% of survey data collected through MTurk may be unusable. The median age of the remaining respondents on the pilot was 33 and the majority of respondents were white (67%) and male (60%). Only 3 of the respondents indicated that they were unemployed. Interestingly, a larger than anticipated quantity of participants who completed the survey indicated "Yes" when asked whether they personally knew some of the state legislators depicted on the survey. However, upon closer review, most of these respondents also failed at least one of the attention checks. Therefore, an indication of "Yes" was deemed more likely an indication of an aberrant responder than a participant with a true personal relationship with any of the leader's depicted on the survey.

Pilot: Scale Items. After the pilot was administered, discriminability and internal consistency among the items and their associated constructs were assessed using Cronbach's Alpha and item-total correlations (Appendices I-K). All reliability estimates were > .70 and almost all indicator items had desirable correlations with the total test score, as all but two item-total correlations were > .5 (Kline, 2005). NAR Item 4 (r =.29) and NAR Item 8 (r = .44) had the lowest item-total correlation coefficients and were marked for removal for not meeting the predetermined threshold. Aside from these two items, analysis of the pilot data provided

promising results for internal consistency, as the 15 scale items for egoistic dominance (α = .97), the 10 scale items for empathy (α = .95), and the 12 scale items for NAR (α = .89) all produced high reliability estimates.

Exploratory factor analysis results were also promising, showing support for clear dimensionality among the proposed domains. Using principle axis factoring and the oblique rotation method, one factor solutions emerged to account for the variance among the items reflecting egoistic dominance (λ = 10.3; S^2 = 69%) and empathy (λ = 7.0; S^2 = 70%). The scree plots for the 15-item egoistic dominance scale and the 10-item empathy scale also indicated single factor solutions (Figure 1) for each subscale independently and all items had factor loadings > .7 (Table 6). Given these promising results, all measures for these two constructs remained in the survey for full data collection.

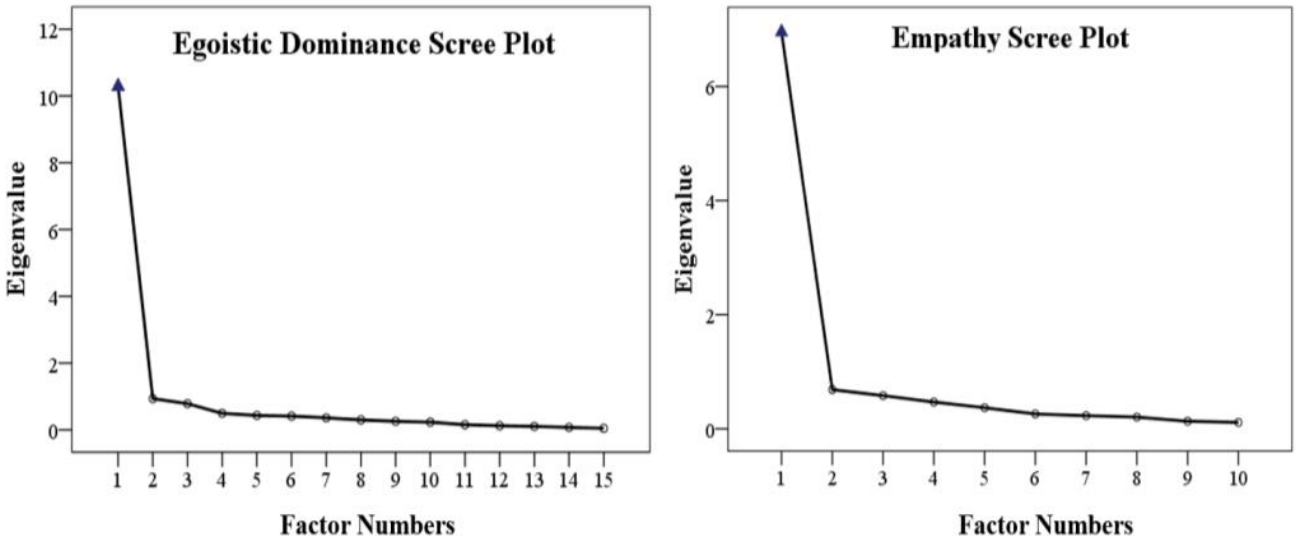


Figure 1: Scree Plot of Factor Eigenvalues (λ) for Egoistic Dominance and Empathy (*n* = 57)

However, the pilot results for the initial, 12-item NAR scale was less clear in terms of dimensionality, and initially, a three factor-solution emerged for the NAR subscale. Thus, a

closer review of the factor loadings and item-total correlations among the NAR items was warranted to explore the potential benefits of removing any problematic scale items. As seen below, the two items with the lowest item-total correlations (NAR4 and NAR8) also appeared to drive the emergence of three-factors, as both of them had the highest loadings on the second and third factors extracted through the EFA performed on the NAR subscale. Thus, the EFA results also supported the decision to remove these items from the NAR scale; since they were problematic in terms of both dimensionality and reliability.

Table 9. *Pattern Matrix for the Three Factors Extracted for the 12-item NAR Subscale (n = 57)*

	Factor 1 S^2 = 47.3%	**Factor 2** S^2 = 10.5%	**Factor 3** S^2 = 9.0%
NAR1	.541		
NAR2			.574
NAR3		.596	
NAR4		***.776***	
NAR5	.699		
NAR6	.480		
NAR7	.866		
NAR8			***.694***
NAR9	.699		
NAR10	.733		
NAR11	.747		
NAR12	.681		

Note: Bold and italicized font indicates problematic items.

After these items were removed, reducing the NAR subscale to 10-items, EFA was performed to reassess dimensionality of the pilot data. The 10-item subscale produced a clear, one-factor solution that accounted for the majority of the variance in the subscale ($\lambda = 5.36$; $S^2 = 54\%$). Removing the problematic items also improved reliability of the scale ($\alpha = .90$), indicating that a 10-item measure of NAR was most appropriate. Furthermore, loadings on the dominant

factor for all of the remaining items were > .5. These findings provided strong justification to permanently remove NAR4 and NAR8 from the survey prior to launching full data collection.

Once all problematic items were removed and it was clear that each scale was measuring the same construct, the last step in reviewing the pilot data (n = 57) was to run a final EFA on the full scale (with all three subscales) to assess whether a clear three-factor solution would emerge and to ensure that the loadings for each indicator item properly aligned with the proposed latent constructs. A three factor solution accounted for the majority of the variance (67.7%) in the pilot data and the scree plot and eigenvalues indicated three dominant factors. A review of these results, along with the pattern matrix (Appendix L), suggested a clear dimensionality among the subscales and a theoretically consistent alignment among each scale item indicator. Thus, no additional items required removal and the detection scales were finalized for full-data collection.

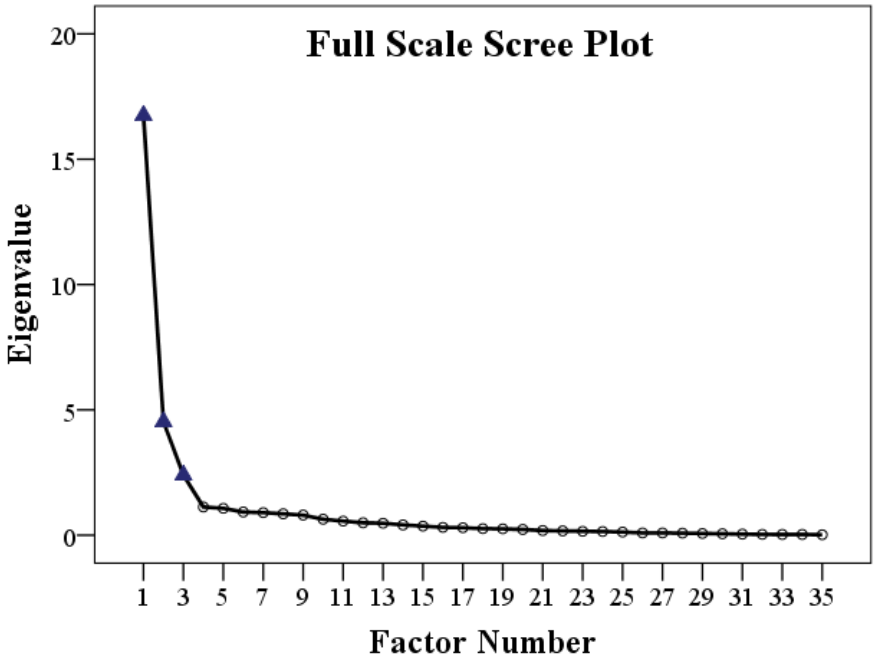


Figure 2: Pilot EFA Scree Plot of Factor Eigenvalues (λ) for Full Scale (n = 57)

Table 10. *Eigenvalue Results and Variance Accounted for Three-Factor EFA Solution (n = 57)*

	Initial Eigenvalues		
Factor	Total	% of Variance	Cumulative %
1	16.75	47.9	47.9
2	4.53	12.9	60.8
3	2.40	6.9	67.7

Pilot: Facial Stimuli. The response time characteristics (M = 6.0; SD = 2.7) from the pilot (n = 57) showed that 65% of the image preference choices were determined in less than 6 seconds and over 90% of responses were made less than 10. Thus, speed (vs accuracy) instructions were deemed sufficient from prompting the participants to select images based on facial stimuli. There was also no indication that the facial stimuli or planned comparisons were problematic. In fact, a preliminary review of the pilot data was already indicating that participants were making consistent inferences among the different facial stimuli. Although the pilot data did not include a desirable sample size for adequate power, the results from the pilot data were showing that both gender and facial structure were influencing perceptions of a leader's aggressive behavior, empathy, and desire for recognition. Given these findings on the pilot, the survey items for Study 2 were deemed sufficient for full data collection and no changes were made.

Final Survey Results

Participant Demographics

A total of 334 additional survey responses were received during full data collection. 34 of these respondents either failed the attention checks and/or indicated "Yes" when asked whether they personally knew any of the state legislators. In the end, 11% of the surveys completed on MTurk were expunged from the data. Thus, the final sample size, combined with the pilot respondents, was $n = 357$. The median age was 33 and the majority of respondents were white (91%). The quantities of male (50.4%) and female (49.6%) participants were almost identical and 16% of the respondents were unemployed. Participants were representative of various industry sectors, but primarily worked in retail and sales (18%); represented the professional/scientific community (16.5%); or held service industry occupations (9.8%).

Study 1: Threat Detection Scale Results

Reliability Analysis. The appendices M-O contain the scale means and correlations for each item measure and the sum of all items scores by construct. All 15 items on the subscale reflecting egoistic dominance showed strong internal consistency ($\alpha = .97$), along with all 10 measures of empathy ($\alpha = .96$) and the 10 items indicating NAR ($\alpha = .91$). All empathy items and NAR items also had significant correlations with each item reflecting dominance (Appendices P-Q) and participant scores on each item were aggregate into total subscale scores. The correlations between the total subscale scores on egoistic dominance and the full, 10-item subscale scores on both empathy ($r = -.75$, $p < .001$) and need for achievement recognition ($r = .70$, $p < .001$) were both significant.

The results highlighted above show strong initial support for H1 and H2; however, the quantity of items reflecting each construct appeared unnecessary, as many of the scale items were redundant and could be deleted with little impact to the overall reliability of each subscale. Thus, exploration into a more parsimonious representation of each construct was warranted and could help prevent potential problems of multicollinearity. After reviewing the correlation matrices (again, Appendices P-Q) for empathy and NAR, 8 items (Table 11) were identified as having the highest average correlations across all 15 measures of egoistic dominance. The egoistic dominance subscale was also reduced, by retaining the 5 items with the highest item-total correlations. The final, 5-item egoistic dominance measure included the following scale items: EGO1, EGO6, EGO8, EGO11, and EGO15.

Table 11. *Empathy and NAR items correlated with egoistic dominance (ED) measures*

Scale Items	**AVG *r* with ED (15 Items)**	**AVG *r* with ED (5 Items)**
EMP Item 1	-.56	-.55
EMP Item 2	-.59	-.57
EMP Item 7	-.60	-.59
EMP Item 9	-.57	-.55
NAR Item 1	.54	.54
NAR Item 7	.46	.47
NAR Item 11	.51	.52
NAR Item 12	.58	.58

Notes: All correlations used to compute the averages were significant at $p < .001$. NAR = Scale items reflecting the need for achievement recognition; EMP = Scale items reflecting empathy.

Analysis of the more parsimonious scale also showed great internal consistency, as the shortened subscales for egoistic dominance ($\alpha = .93$), empathy ($\alpha = .93$), and NAR ($\alpha = .83$) each maintained high reliability estimates. Additionally, the correlation between the 5-item subscale for egoistic dominance and the 4-item subscale scores for both empathy ($r = -.71$, $p < .001$) and need for achievement recognition ($r = .74$, $p < .001$) remained significant (Appendix R). Thus,

scores on the shortened scales still provided reliable and promising results, as the need for achievement recognition (H1) and empathy (H2) maintained their significant relationships the egoistic dominance behaviors characteristic of toxic leaders.

Convergent and Discriminant Validity. Convergent and discriminant validity (Table 12) was also assessed for the shortened NAR and empathy scale items. As projected, the four NAR items showed high convergent validity with the measures of narcissism (r = .76) and self-promoting behavior (r = .78). However, the relationship between scores on the transformational leadership inventory that measure a leader's high performance expectations were not significant. This finding was considered problematic, as it was anticipated that leaders with a high need for achievement recognition would be strongly associated with these scale items (e.g. shows us that he/she expects a lot from us; insists on only the best performance; and will not settle for second best). The NAR items did reflect discriminant validity, scoring negative correlations with items reflecting the individualized consideration (r = -.63) and courtesy (r = -.58) facets of transformational leadership. Also as anticipated, the four empathy items had significantly positive correlations with individualized consideration (r =.84) and courtesy (r =.90) and significantly negative or low correlations with narcissism (r = -.59), self-promotion (r = -.77), and high expectations (r =.11). In sum, the proposed measures for empathy had reasonable convergent and discriminant validity and properly reflected their intended constructs.

Given the high correlations with existing measures, it was prudent to consider whether the proposed items for NAR and empathy added any benefit for predicting the egoistic dominance behaviors employed by leaders. However, each pre-existing subscale (minus self-promotion) had slightly lower correlations with the 5-item egoistic dominance subscale than both NAR and empathy. Furthermore, the measures of narcissism and self-promotion appeared

highly problematic in terms of inducing response distortion from subordinates. Thus, the more ambiguous 4-item measures for NAR and empathy appear superior to the pre-existing measures.

Table 12. *Convergent and Discriminant Validity Matrix Results*

Proposed Subscales	**Previous Subscales** (Schmidt, 2008; Podaskoff et al., 1990)				
	Narcissism	**Self-Promotion**	**High Expectations**	**Individualized Consideration**	**Courtesy**
NAR	***.76***	***.78***	n. s.	***-.63***	***-.58***
Empathy	***-.59***	***-.77***	***.11***	***.84***	***.90***

Notes: Bold and italicized correlations were statistically significant.

Confirmatory Factor Analysis. Based on the literature review, reliability analysis, and the EFA outcomes in the pilot sample, a three correlated factors solution was projected to best represent participant responses on the proposed scale. Support for the following dimension-indicator alignment was projected for the three-factor model:

Factor 1: Egoistic Dominance 5-Item Scale (*EGO1 EGO6 EGO8 EGO11 EGO15)*

Factor 2: Need for Achievement Recognition 4-Item Scale (*NAR1 NAR7 NAR11 NAR12)*

Factor 3: Empathy 4-Item Scale: (*EMP1 EMP2 EMP7 EMP9)*

Although a three correlated factors solution would lend support for the hypotheses, it was prudent to test fit of a one-factor model since all of the scale items are reflective of one general construct: toxic leadership. The same 13 indicators were retained for each model tested, only with a different number of factors included in the model. Fit indices were then compared between these reasonably assumed models to determine the most feasible solution (Table 13).

The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) were < .95 for the single factor model, indicating an undesirable fit to the data. Furthermore, the Root Mean Squared

Error of Approximation (RMSEA) was > .08, again showing poor fit between the model and the actual observed data. Thus, the single-factor model was insufficient for explaining the dimensionality of the scale.

Table 13. *Comparison of CFA Model Fit Indices*

Model	χ^2	Df	*p*	CFI	TLI	RMSEA	90% CI	SRMR
One Factor	611	65	.001	.845	.814	.153	.142-.165	.064
Three Factor	114	62	.001	***.985***	***.981***	***.048***	***.034-.062***	***.03***

Notes: χ^2 = chi-square statistic; Df = degrees of freedom; *p* = calculated probability; CFI = Comparative Fit Index; TLI (Tucker-Lewis Index); RMSEA = Root Mean Squared Error of Approximation; CI = Confidence Interval; SRMR = Standard Root Mean Residual

As projected however, the three factor model showed the best model fit and met the minimum thresholds typically used to assess fit of a CFA model. The CFI and TLI were both > .98 and the RMSEA and Standard Root Mean Residual were both < .05, showing excellent fit for the hypothesized model. Although non-significance was preferred for the chi-square test, χ^2 (62, n = 357) = 114.04, p < .001, this statistical measure was ignored due to its common susceptibility to large samples sizes. Beyond the encouraging model fit indices, all but three of the correlation residuals for the three factor model were < |.1|; there was a clear factor-indicator alignment; and all factor loadings were high (Table 14).

Based on the literature review and the CFA support for a 3-factor solution, structure was also imposed on the three factor model, such that the latent variable of egoistic dominance was regressed on the latent variables reflecting NAR and Empathy. This structural equation model (Appendix S) appeared accurate for representing the observed scores on the toxic leader detection scale. In sum, the CFA analysis confirmed the factor structure anticipated from the pilot data and supports the theoretically proposed relationships among the three domains

indicative of toxic leadership (H3). Thus, it was determined reasonable to assess the predictive validity of the associated scale item scores.

Table 14. *Standardized Results of the Three Factor Structural Model*

Indicators/Scale Items	*F1*	*F2*	*F3*	*Residual S^2*
EGO1	.826			.317
EGO6	.848			.280
EGO8	.844			.287
EGO11	.857			.265
EGO15	.844			.287
NAR1		.723		.477
NAR7		.670		.551
NAR11		.742		.449
NAR12		.814		.338
EMP1			.856	.267
EMP2			.851	.275
EMP7			.886	.215
EMP9			.899	.192

Notes: All values were significant ($p < .001$). NAR = Need for Achievement Recognition; EMP = Empathy

Regression Analysis. Using the same shortened scales tested in the above structural equation model, a multiple linear regression was used to assess the amount of variance in leaders' egoistic dominance scores that can be attributed to their scores on both empathy and a high need for achievement recognition. In order to cross-validate the regression results, the response data (n = 357) was randomly split into calibration and validation sample sets. The calibration sample produced the following unstandardized regression equation: *11.859 + .586*NAR - .516*Empathy*, explaining 60.8% of the variance in egoistic dominance behaviors, R^2 = .608, $F(2, 178)=136.34$, $p < .001$. Applying this calibrated regression equation to the validation sample, produced a predicted $R^2 > .508$. Thus, the overall R-squared shrinkage (.0996) was < .10, indicating that the model cross-validated (Kleinbaum, Kupper, Nizam, & Rosenbuerg, 2013) and was acceptable for predicting the egoistic dominance behaviors that are

consistent with toxic leadership (H3). No significant correlations were found among the participant demographics and the total scores on egoistic dominance. Thus, participant age, gender, ethnicity, industry, and employment status were not included in the regression model.

The high correlation observed between NAR and empathy sparked the need to test for moderation and the interaction term between empathy and need for achievement recognition was added to the regression model. The short scales for NAR and empathy were mean centered and the empathy-NAR interaction was computed and entered into the regression equation. This interaction term was significant and helped account for a larger portion of the total variance in the criterion ($R^2\Delta$ = .005, p = .026); therefore, a leader's lack of empathy moderates the relationship between the need for achievement recognition and egoistic dominance behaviors (Table 15). Collinearity statistics were also favorable for the moderated regression model, as the tolerance (*Tol* = .59) and variance inflation factors (*VIF* = 1.71) did not suggest any problems of multicollinearity. The final standardized regression model, *9.764 + .493*NAR - .357*empathy - .079*Interaction*, was significant (H3), accounting for 64.7% of the variance in egoistic dominance scores, R^2 = .647, $F(3, 353)=215.91$, $p < .001$.

Table 15. *Regression Models for Predicting Egoistic Dominance Behaviors*

Model	N	R^2	ΔR^2	Predictor	B	SE(B)	β
1	357	.642	-	Constant	9.990**	.162	
				NAR	.629**	.054	.485
				EMP	-.520**	.054	-.398
2	***357***	***.647***	***.005***	***Constant***	***9.764*****	***.190***	
				NAR	***.639*****	***.054***	***.493***
				EMP	***-.467*****	***.059***	***-.357***
				EMP-NAR Interaction	***-.023****	***.010***	***-.079***

Notes: **indicates $p < .001$; *indicates $p < .03$; B = unstandardized coefficient; β = standardized coefficient; NAR = Need for Achievement Recognition; EMP = Empathy

Latent Profile Analysis (post-hoc). Up to this point, the evidence has shown how the proposed threat detection scale has a theoretically relevant dimensional structure and accounts for up to 64.7% of the variability in leaders' egoistic dominance behaviors. However, these results are based on a variable-centered perspective and usability of the scale also depends on interpretability of the scale scores from the person-centered perspective. Although no related hypotheses were developed a priori, distinct subpopulations of leaders may differ by the degree (or amount) in which they employ behaviors indicating toxic leadership. Based on how followers score each leader on the detection scale, the person-centered approach (Gabriel, Daniels, Diefendorff, & Greguras, 2015) can help identify and interpret the scores among for different leader groups, or subpopulations. Specifically, grouping leaders by their score commonality on NAR and empathy can help identify distinct leader clusters and allow organizations to flag the high-threat leaders who are perceived as most prone to employing the anti-subordinate behaviors consistent with toxic leadership.

For this purpose, latent class analysis with MPLUS was used to empirically extract the number of leader groups that best represented the data and identify the score patterns that are directly associated with the highest scores on egoistic dominance. More specifically, scores on the 4-item measure of NAR and the 4-item measure of empathy (n = 357) were used to determine whether different subpopulations of leaders emerged and, if so, how to interpret the score differences of each group. Group trends were then analyzed to identify any distinct patterns of NAR and empathy scores, along with the mean levels of egoistic dominance ratings associated with each group.

The number of groups were unknown a priori, thus model construction was done through an exploratory approach. Consistent with other research regarding latent profile analysis (e.g.,

Foti, Bray, Thompson, & Allgood, 2012; Gabriel et al., 2015), multiple fit statistics were used to inductively evaluate and compare a series of models. These statistical measures included log likelihood (LL), Akaike information criterion (AIC), Bayesian information criterion (BIC), sample-size-adjusted BIC, Lo-Mendell-Rubin likelihood ratio test (LMR; Lo, Mendell, & Rubin, 2001), and the bootstrap likelihood ratio test (BLRT). The best fitting model would reflect statistical significance ($p < .05$) for both the LMR and BLRT and have the lowest total values for the LL, AIC, BIC, and SSA–BIC fit statistics.

Table 16. *Fit Comparison for Various Group Quantities/Structure*

Class QTY	LL	FP	AIC	BIC	Sa-BIC	BLT (*p*)	LMR(*p*)	Entropy
1	-4429	16	8891	8953	8902	-	-	-
2	-3803	25	7657	7754	7675	.001 (1 vs 2)	.001 (1 vs 2)	.953
3	***-3622***	***34***	***7312***	***7444***	***7336***	***.001 (2 vs 3)***	***.007 (2 vs 3)***	***.885***
4	-3555	43	7197	7364	7228	.001 (3 vs 4)	.450 (3 vs 4)	.853

Notes: LL = log-likelihood; FP = free parameters; AIC = Akaike information criteria; BIC = Bayesian information criteria; Sa-BIC = sample-size-adjusted BIC; LMR = Lo, Mendell, and Rubin test; Bootstrapped log-likelihood test. Values in bold font are associated with the most plausible model.

After comparing the fit statistics and relative appropriateness of various latent structures (1, 2, 3, and 4 class solutions), the three-class solution emerged from the data as the most plausible model (Table 16). Therefore, scores on the proposed scale for toxic leadership were interpreted by retaining three different and theoretically meaningful leader groups, categorized as: Group 1 (low NAR and high Empathy scores), Group 2 (medium NAR and medium Empathy), and Group 3 (high NAR and low empathy scores). The behavioral styles associated with Groups 1 and 2 appeared to have low to medium threat level characteristics, as their response patterns (Appendix T) did not reflect extremely high levels or extremely low levels on empathy. On the other hand, leaders falling into Group 3 appeared to have high threat level

characteristics; since, their high scores on NAR and low scores on empathy appeared highly congruent with characterizations of toxic leadership.

The detection accuracy of the proposed toxic leadership scale, given the values associated with this three-profile solution, were promising. The value of the statistical measure of entropy (.885) was high, indicating a favorable degree of certainty in terms of overall group classification accuracy. The reliability of each group classification was also high (Table 17), as the probability of assignment into Group 1 (.96), Group 2 (.90), and Group 3 (.98) were all above .8 and the off-diagonal probability estimates were low, revealing a negligible chance that a leader could belong to a group outside of their estimated classification.

Table 17. *Average Latent Profile Probabilities for Most Likely Group Membership*

Group (*threat level*)	Observed Behavioral Patterns	1 *(low)*	2 *(medium)*	3 *(high)*
1 *(low)*	Low NAR; High Empathy	***.96***	.04	.00
2 *(medium)*	Medium NAR; Medium Empathy	.08	***.90***	.02
3 *(high)*	High NAR; Low empathy	.00	.02	***.98***

Notes: The class assignment probabilities (the bolded diagonal values) indicate the reliability of the classification; values > .8 were considered acceptable. Off-diagonal probabilities indicate overlap; low values reflect a negligible chance of belonging to a second class. Threat level indicates the potential that the group behavioral patterns are indicative of toxic leadership.

Given the high degree of confidence in the accuracy of each group classification, the next step was to assess the size of group membership. Based on the estimated model, most of the sampled followers (n = 357) scored their leaders consistent with the leadership style reflecting Group 1, as the data suggests that over half (55%) of all leader perceptions likely belong in this profile category. Group 2 was the second largest leader style category (29%), while the smallest proportion of perceived leaders would most likely fall under Group 3 (16%). Therefore, 16% of the leaders assessed in this study could be flagged as having a toxic leadership style.

Interestingly, this number was similar to Vreja et al.'s (2016) estimate that roughly 20% of leaders manifest the anti-subordinate behaviors associated with toxic leadership.

The evidence of fit and accuracy suggest that scores on the toxic leader detection scale can help accurately classify leaders into three clear and interpretable leader subpopulations. However, each leader group must also have a meaningfully different score on egoistic dominance in order to effectively label the threat level of each style. If each group reflects significantly different relationships with the items reflecting egoistic dominance, and the NAR-empathy indicator scores are significant, then meaningful threat levels can be calculated.

Table 18. *Indicator and Outcome Scores for Each Leader Group*

	Mean (*M*) Scores for Each Leader Group		
Items	Group 1 (low threat)	Group 2 (medium threat)	Group 3 (high threat)
Indicators			
NAR1	2.09	3.37	4.26
NAR7	2.10	3.38	3.47
NAR11	1.70	2.97	3.34
NAR12	1.91	3.23	3.84
EMP1	4.18	3.35	1.84
EMP2	4.57	3.74	2.12
EMP7	4.45	3.56	1.96
EMP9	4.39	3.68	1.94
Outcomes			
EGO1	1.37	2.44	3.51
EGO6	1.32	2.41	3.42
EGO8	1.36	2.59	3.57
EGO11	1.15	2.21	3.17
EGO15	1.39	2.63	3.12

Notes: All values were significant ($p < .001$). NAR = Need for Achievement Recognition; EMP = Empathy

The DCON command in MPLUS (Lanza, Tan, & Bray, 2013) was used to compare the groups and assess whether leaders classified into these groups generated significantly different scores on the outcome variables (e.g. the 5 scale items for egoistic dominance). The results

(Table 18) indicated that the mean group-indicator scores for NAR and empathy were all significant ($p < .001$). Thus, the behavioral patterns of NAR and empathy were properly representative of each leader group. Furthermore, the mean scores on each egoistic dominance measure were significantly different among all three groups. Using chi-square estimates to test the equality of the mean egoistic dominance scores, leaders categorized into Group 1 scored significantly lower than members of Group 2 on EGO1, χ^2 (1, n = 357) = 74.09, $p < .001$; EGO6 χ^2 (1, n = 357) = 86.76, $p < .001$; EGO8 (χ^2 (1, n = 357) = 112.08, $p < .001$; EGO11 (χ^2 (1, n = 357) = 141.95, $p < .001$; and EGO15 (χ^2 (1, n = 357) = 111.15, $p < .001$. Group 2 also scored significantly lower than members of Group 3 on EGO1, χ^2 (1, n = 357) = 29.36, $p < .001$; EGO6 χ^2 (1, n = 357) = 26.36, $p < .001$; EGO8 (χ^2 (1, n = 357) = 29.40, $p < .001$; EGO11 (χ^2 (1, n = 357) = 30.97, $p < .001$; and EGO15 (χ^2 (1, n = 357) = 7.84, $p < .005$.

In sum, the person-centered approach was useful for categorizing leaders into groups using follower scores on the toxic leadership threat detection scale. These groups were also significantly different from each other on each measure of egoistic dominance, and consequently, the mean indicator scores reflecting high NAR and low empathy can meaningfully determine the degree behavioral patterns associated with toxic leaders. Specifically, the mean scores on the proposed threat detection scale (Figure 3) that are commensurate with the ranges characterizing Group 3 (NAR, M = 3.34-4.26; empathy, M = 1.84-2.12) have a significantly higher likelihood of behaving aggressively toward others (EGO1, M = 3.51); publicly belittling followers (EGO6, M = 3.42); using coercive techniques (EGO8, M = 3.57); engaging in aggressive posturing (EGO11, M = 3.17); and bestowing arbitrary punishments (EGO15, M = 3.12).

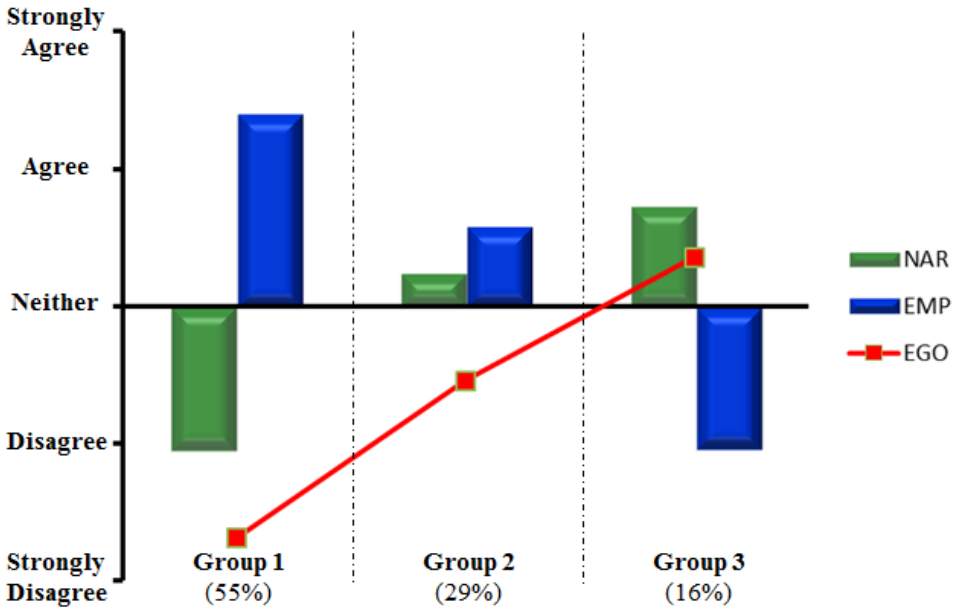


Figure 3: Average Scale Response Scores Characterizing Each Leader Group

Study 2: Facial Perceptions

Using completely balanced and crossed designs, five different paired comparisons were randomly presented during the study. The first four comparisons were between masculine vs feminine facial structures and a fifth comparison consisted included the masculine facial structures of males vs females (Appendix U). Each participant (n = 357) observed all possible image sets and were asked to select the leader that would most likely behave aggressively (prompt 1); have the strongest desire to be recognized for their achievements (prompt 2); and care most about others (prompt 3). The scores across each of the comparison sets were aggregated (total score possibilities ranged from 0-4) for each image presented and total scores were used to generate the descriptive statistics and test for significant differences using a series of one-way and 2x2 factorial ANOVAs.

Image Inferred Perceptions of Leader Aggression. The participants overwhelmingly perceived male images with masculine facial structures (M = 3.27; SD = .99) as significantly more aggressive than both male and female images with feminine facial structures. Females with masculine facial structures scored the second highest (M = 2.73; SD = 1.22), while males (M = .93; SD = 1.16) and females (M = .78; SD = 1.23) with feminine facial structures induced the lowest overall scores on aggression (Figure 3). These effects were significant, as there were main effects found for both gender $F(1, 356) = 53.87$, $p < .001$ and facial structure $F(1, 356) = 525.26$, $p < .001$. There was also a significant interaction effect between gender and facial structure, $F(1, 356) = 5.76$, $p < .017$.

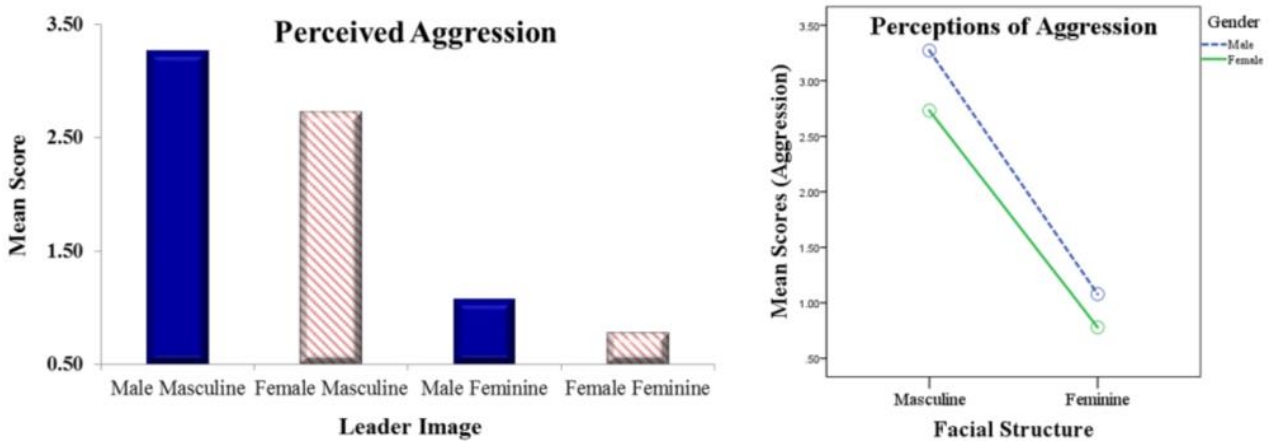


Figure 4: Inferred Aggression by Image Type (n = 357)

These results suggest that, without any other information, just the appearance of a male leader tends to induce perceptions of aggression (η^2 = .131). However, an even larger effect (η^2 = .596) on perceptions of aggression was created by leaders' with masculine facial structures, which occurred regardless of whether the leader's image was male or female. A slight interaction effect (Figure 3) was also observed between gender and facial structure (η^2 = .016).

Therefore, not only did a masculine facial structure generate the greatest perceptions of leader aggression, but these image induced inferences were even larger when the masculine looking leader was male (H4a).

Table 19. *Aggressive Behavior 2x2 Factorial ANOVA Results*

Egoistic Model	df	Sum of Squares	Mean	F-Value	P > F
Gender (SSB)	1	63.03	63.03	53.87	< .001
Error (Gender)	356	416.48	1.17		
Face Structure	1	1533.90	1533.90	525.26	< .001
Error (FaceStructure)	356	1039.61	2.92		
Gender*Face	1	5.18	5.18	5.76	.017
Error Gender*Face	356	320.32	.900		

Image inferred Perceptions of a Desire for Recognition. Using the same paired comparisons (Appendix U) and procedures as described in the previous section, the same participants (n =357) were also asked to select the leader with the strongest desire to be recognized for their achievements. Scores were again aggregated (ranging from 0-4) for each image presented and compared (Figure 4). Again, the participants perceived male images with masculine facial structures (M = 2.41; SD = 1.33) as significantly more likely to strongly desire recognition for their achievements than both male (M = 1.85; SD = 1.31) and female (M = 1.88; SD = 1.31) images with feminine facial structures.

These effects were statistically significant, as there were main effects found for both gender $F(1, 356) = 16.05$, $p < .001$ and facial structure $F(1, 356) = 5.42$, $p < .021$, along with an interaction effect between gender and facial structure, $F(1, 356) = 28.04$, $p < .001$. However, contrary to the results for perceptions of aggression, females with masculine facial structures (M = 1.87; SD = 1.45) scored similar on the need for recognition as both males and females

appearing feminine. Thus, only male leaders appearing masculine dominated the image induced perceptions regarding a leader's need for achievement recognition.

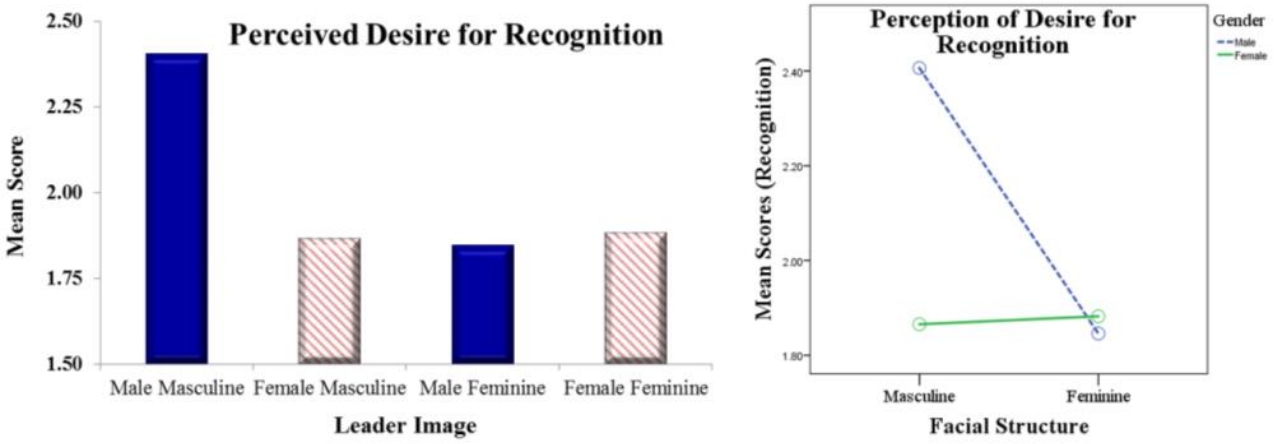


Figure 5: Inferred Need for Recognition by Image Type (n = 357)

These results suggest that male leaders (η^2 = .044) and masculine facial structures (η^2 = .015) induce only slightly larger perceptions of desiring recognition. However, the largest effect (η^2 = .073) was created from the interaction between gender and facial structure. In fact, the participants inferred that males had the greatest need for recognition when their facial structure was masculine, but this perception dropped dramatically when the male faces appeared more feminine (Figure 4). This interaction effect showed an inverse relationship between gender and facial structure, such that feminine looking males actually scored lower than both masculine and feminine looking females (H4b).

Table 20. *Desire for Recognition 2x2 Factorial ANOVA Results*

NAR Model	df	Sum of Squares	Mean	F-Value	P > F
Gender (SSB)	1	22.69	22.69	16.508	< .001
Error (Gender)	356	489.31	1.37		
Face Structure	1	26.36	26.36	5.42	.021
Error (FaceStructure)	356	1732.64	4.87		
Gender*Face	1	29.72	29.72	28.04	< .001
Error Gender*Face	356	377.29	1.06		

Image Inferred Perceptions of Leader Empathy. Finally, the participants (n =357) were asked to select the leader image that would care most about others. The aggregated scores (again ranging from 0-4) under these conditions showed that female images with feminine facial structures (M = 2.95; SD = 1.14) were perceived as having the greatest empathy, following by male images with feminine facial structures (M = 2.61; SD = 1.21). Images reflecting masculine facial structures, of both males (M = 1.01; SD = 1.11) and females (M = 1.43; SD = 1.37), were significantly less likely to produce perceptions that they would care most about others (Figure 5).

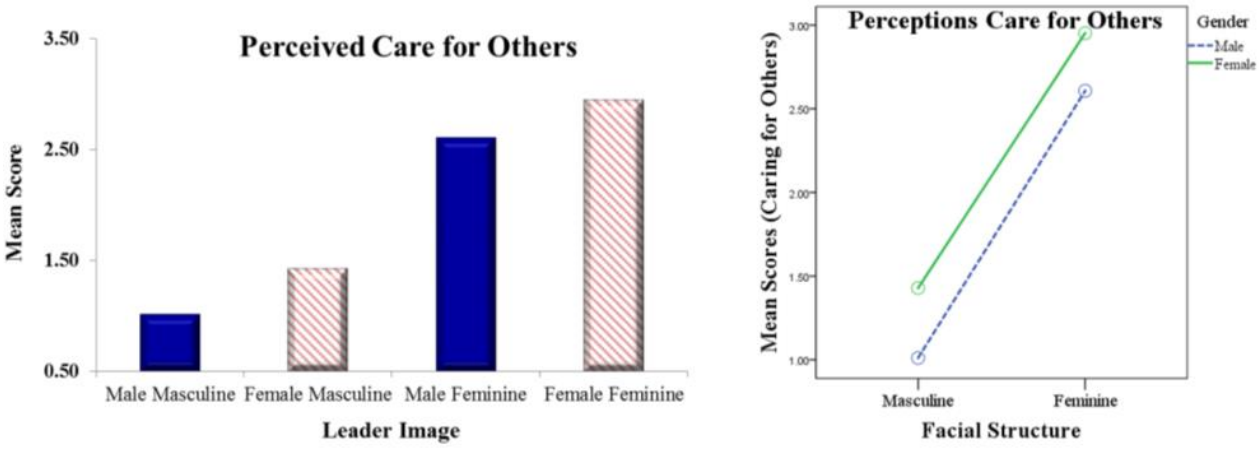


Figure 6: Inferred Empathy by Image Type (n = 357)

These effects were also significant, as there were main effects found for both gender $F(1, 356) = 41.34$, $p < .001$ and facial structure $F(1, 356) = 237.26$, $p < .001$. However, unlike the

previous two conditions, there was no interaction effect between gender and facial structure, $F(1, 356) = .495$, $p < .482$. These results suggest that feminine facial structures ($\eta^2 = .400$), followed by a female image ($\eta^2 = .104$), have the greatest tendency to induce perceptions regarding a leader's level of empathy (H4c).

Table 21. *Cares for Others 2x2 Factorial ANOVA Results*

Empathy Model	df	Sum of Squares	Mean	F-Value	P > F
Gender (SSB)	1	51.81	51.81	41.34	< .001
Error (Gender)	356	446.19	1.25		
Face Structure	1	869.05	869.05	237.26	< .001
Error (FaceStructure)	356	1303.96	3.66		
Gender*Face	1	.47	.47	.495	.482
Error Gender*Face	356	340.53	.96		

Assessing Gender Related Stereotype Threats. The fifth set of image comparisons was designed to explore whether perceptions of male and female leaders varied when only masculine images were available to the participants (n =357). Using direct comparisons between males and females with masculine facial structures, the participants still believed males were more likely to employ aggressive behaviors (M = 1.21; SD = .76) and have a strong need for achievement recognition (M = 1.18; SD = .80) than masculine females (M = .79; SD = .76; M = .82; SD = .80). Furthermore, females with masculine facial structures (M = 1.15; SD = .83) were still considered more caring than males with masculine facial structures (M = .85; SD = .83). Although these image induced perceptions of aggression ($\eta^2 = .071$), the need for recognition ($\eta^2 = .050$), and care for others ($\eta^2 = .030$) were not large, the differences were still significant (Table 19) and opposite of the anticipated results (Appendix V). Thus, no evidence was found to support hypotheses 5a-5c and images alone were not enough to induce the hypothesized gender related stereotype threats among the participants.

Table 22. *One Way ANOVA Results: Male vs Female Masculine Facial Structures*

Masculine Models	df	Sum of Squares	Mean	F-Value	P > F
Aggression (SSB)	1	31.51	31.51	27.33	< .001
Error (SSW)	356	410.49	1.25		
	357	442.00			
Recognition (SSB)	1	24.40	24.40	18.90	< .001
Error (SSW)	356	459.60	1.29		
	357	483.00			
Empathy (SSB)	1	15.15	15.15	11.03	< .001
Error (SSW)	356	488.85	1.37		
	357	503.00			

Discussion

The purpose of this research was to align the existing literature on toxic leadership and explore its indicative domains through the lens of followers, accounting for subordinate perceptions of leader behaviors and physical characteristics. A critical exploration of the literature identified a multitude of confusing characterizations and overlapping definitions of toxic leadership. Considering these definitions and capturing the core facets of the contagious toxic leadership phenomenon, produced a definition which stresses a leader's anti-subordinate behaviors that are designed to dominate followers and achieve need-based goals.

Despite attempts by Tepper to align research streams related to toxic leadership (Tepper, 2000, 2007), experts still disagree on a precise definition and unified conceptualization of the construct (Vreja et al., 2016). This study proposed that toxic leadership is: *A process in which a leader systematically employs abusive, anti-subordinate behaviors to dominate their followers and achieve the leader's need-based goals*. With the proposed definition in place, the associated literature was aligned and trait-linked toxic leader behaviors were identified and tested using two distinct studies.

Toxic Leader - Threat Detection Scale

Theoretical implications. The results from Study 1 clearly indicated that measures reflecting a leader's NAR and empathy have strong relationships with measures of anti-subordinate, egoistic dominance behaviors. As predicted in Hypothesis 1, behaviors reflecting NAR had a significant positive relationship ($r = .74$, $p < .001$) and a high factor loading ($\lambda = .63$, $p < .001$) on egoistic dominance criterion. Using the same statistical indicators, Hypothesis 2 was

also supported. Behaviors reflecting a leader's empathy had a significantly negative relationship (r = -.71, p < .001) and a moderate negative loading (λ = -.30, p < .001) on the egoistic dominance of toxic leaders. Combined, the scores on the proposed threat detection scale consisting of only 8 items (4 items each to detect NAR and empathy) accounted for 64.7% of the variance in scores on egoistic dominance. These initial results also showed that the NAR (α = .83) and empathy (α = .93) scales were highly reliable and therefore useful for signaling the presence of a toxic leader. In sum, Hypothesis 3 was supported, as behaviors reflecting low empathy and a high need for achievement recognition significantly predicted the harmful behaviors that, according to pre-existing literature, are commonly employed by toxic leaders.

Additionally, the significant interaction (p = .026) found between the NAR and empathy subscale scores supports the idea that a leader's empathy acts as a filter that moderates the employment of toxic behaviors. This finding was congruent with prior research that suggests empathy can moderate aggressive behavior (Ali, Amorim, & Chamorro-Premuzic, 2009; Richardson, Hammock, Smith, & Gardner, 1994; Wheeler, George, & Dahl, 2002). Given these consistencies, rooting out leaders with notable empathy deficits is crucial. Leaders lacking sufficient levels of empathy will have no qualms about using coercion, manipulation, and aggressive dominance to achieve organizational or personal goals. Without the natural inhibition to withhold inappropriate or cruel behaviors, there is no regulator for the toxic gas spewed onto followers.

However, the lack of empathy alone may not be enough, as leaders still need a reason to ruthlessly treat their subordinates like disposable instruments. The findings from Study 1 suggest that an overly high need for achievement recognition is an important motivator, driving leaders to influence followers through any means necessary to accomplish their desired goals.

Unless other external pressures keep these non-empathetic and highly driven leaders at bay, they are free to trample on followers as they self-aggrandize and pursue their own ego-inflating goals. These findings support the idea that an "ego gone wild" condition is created when the empathetic filter is removed from leaders, allowing them to embrace overly aggressive and anti-subordinate behaviors without regret.

Practical Implications. The proposed threat detection scale tested in this study appears superior to previous measures of toxic leadership. Not only are the subscales highly reliable, but they predict egoistic dominance behaviors that, when employed by leaders, create the conditions of toxic leadership. Furthermore, the proposed scale consists of only 8 indicator items, which are not likely to induce response distortion due to their ambiguous nature. Previous scales for toxic leadership (e.g. Schmidt, 2008; Ross, 2016) contain too many measures and appear too overt. Thus, these pre-existing measures can be impractical to use or could easily cue followers to endorse a response to maintain social desirability. The more ambiguous items proposed in this study can mitigate fears of reprisal and help limit the quantity of responses based on social desirability. The less transparent items can also help avoid the inflation of scores based on a follower's desire for retribution, which can occur from disliked or unfavorable leaders regardless of whether they actually qualify as toxic.

As a comparison, the scale developed by Ross (2016) contains 24 items; 13 of which have a high potential to induce response distortion. Even larger, the scale proposed by Schmidt (2008) contains 30 items, 11 of which have a high potential to induce response distortion. This scale also had no direct measures of leader empathy and items were only validated in a military environment. Perhaps most importantly, predictions on the Schmidt (2008) scale were only relevant to leader outcomes, not for detecting leaders with high toxic potential. Each prompt

asked military participants to think of the most destructive leader they ever experienced, eliminating the opportunity to observe how non-military and non-toxic leaders might score on the measures. This approach prevented a score comparison between toxic and non-toxic leaders; thus, there is no way to determine a differentiating range of scores among various leader styles.

As opposed to only assessing leaders already identified as toxic, this study recorded behavioral scores on any type of leader and employed latent profile analysis to identify different score clusters on the threat detection scale. This person-centered approach produced three behavioral clusters (or leadership styles), which were qualitatively and empirically identified as leaders with low (Group 1), medium (Group 2), and high (Group 3) threat levels of toxic leadership. The practical implications of these results are important. Leaders scoring consistent with the behavior patterns of Group 1 are most likely not toxic and organizations can immediately screen them out of consideration for a toxic classification. Meanwhile, any leader scoring congruent with Group 3 (NAR, M = 3.34-4.26; empathy, M = 1.84-2.12) could be immediately flagged as toxic and earmarked for an organizational intervention. Of course, leaders in Group 3 may not actually be toxic, but they certainly reflect the extreme behavioral patterns most indicative of the harmful, anti-subordinate behaviors of toxic leadership. The type of leadership style characterized by Group 2 is quite interesting, as it includes moderate levels of NAR and empathy. Perhaps reflecting the right balance between initiating structure and showing consideration, leaders categorized into Group 2 could be results-oriented and firm, yet understanding and selfless. These behavioral patterns may represent a "sweet-spot" of leader influence and effectiveness, and will likely produce the highest follower satisfaction and organizational performance metrics. Although more research is needed to assess the

performance outcomes associated with each style, the message is clear; the proposed toxic leader threat detection scale can detect meaningful variations in leader behavioral patterns.

Toxic Leader – Image Induced Perceptions

The detection scale developed was based on observations of leader behaviors. However, prior research on image based performance inferences suggest that a leader's physical characteristics can also play an important role in follower judgement. Although leader behaviors typically explain more variance in performance than leader traits, models that integrate leader behaviors, traits, and effectiveness are warranted (DeRue, Nahrgang, Wellman, & Humphrey, 2011). Therefore, it was also important to explore whether we can actually "see" traits of toxic leadership when the behavioral indicators are unavailable. Prior research has shown that followers may prefer leaders that appear dominant and masculine, "seeing" both competence and effectiveness in a leader's physical appearance (Antonakis & Dalgas, 2009; Linke, Saribay, & Kleisner, 2016). However, whether these same facial characteristics of strength and competence can generate perceptions related to toxic leadership has never been tested.

Theoretical Implications. The results of the leader image comparisons, captured during Study 2, support the notion that leaders may indeed have a "toxic appearance" which should be considered beyond just their behavioral characteristics. Despite a total lack of behavioral information, the participants used a leader's physical traits to infer their propensity to behave aggressively (supporting H4a), desire recognition for their achievements (supporting H4b), and empathize with others (supporting H4c). Consistent with evolutionary perspectives, male leaders with an imposing masculine appearance induced automatic threat perceptions, matching the domains indicative of toxic leadership. Masculine looking females also induced inferences matching characteristics of toxic leadership, albeit to a lesser degree than masculine looking

males. On the other hand, feminine looking leaders, male and female, appeared much less threatening and were not likely to induce automatic perceptions of toxic leadership based on physical appearance alone. These findings showed that a wider range of effects beyond positive aspects of leader effectiveness can be explored through face-ism techniques. Regardless of their accuracy, followers clearly made negative inferences based on a leader's appearance. These types of perceptions could lead to harmful, self-fulfilling prophecies. This is especially true for followers who rely on facial appearance to shape their expectations, impacting the acceptance of a leader; determining the latitude of acceptable leader behavior; or influencing the leader's motivation and performance (Shamir, 2007).

Interestingly, there was no observed effect of stereotype threat, as the female-masculine faces did not outscore male-masculine faces on any of the domains indicative of toxic leadership. Although the hypotheses regarding stereotype threat were plausible given past research, the conflicting findings were not entirely surprising; since, society repeatedly characterizes men as being more dominant and aggressive. Despite the lack of support for Hypotheses 5a through 5c, the results were still revealing. First, images alone were not enough to produce any gender related stereotype threats. Therefore, the phenomenon may only be behaviorally-based, as past research has indicated. Second, significant differences were still found between the male and female masculine faces. Thus, male leaders with imposing facial structures were consistently the most vulnerable to perceptions related to toxic leadership.

Practical Implications. The perceptions induced by these leader images have interesting implications regarding leader prototypes and whether it is acceptable to select leaders for roles that match the perceptions induced by their physical appearance. Consistent with Implicit Leadership Theory (ILT), the leader-follower prototype match can moderate the relationship

between leader emergence and subjective leader effectiveness (Judge, Piccolo, & Kosalka, 2009). Since leadership is an interaction between follower perceptions and leader characteristics (Hollander and Julian, 1969), and followers evaluate leaders based on the degree in which they match their ideal leader prototype (Lord, Foti, & DeVader, 1984), a follower's prior experiences and assumptions regarding leaders with masculine profiles can have important implications for leader selection and placement. In fact, a study by Ritter and Lord (2007) indicates that erroneous generalizations of abusive treatment can be transferred between past and present leaders. Therefore, replacing a known toxic leader with a male leader that appears overly masculine may prove counterproductive due to stereotyping and follower prejudice. Perceptions of a hostile organizational climate may simply carry over to the next "prototypical" leader that looks like a toxic meat-eater, irrespective of any actual behaviors. These considerations may have even greater importance in large organizations, where the behaviors of key leaders in the highest leadership positions are rarely observed directly and most followers are only familiar with the appearance of their most powerful leaders.

Although not made known to the participants, the images used in this study were all US legislators from various states. Therefore, the image based perceptions were global, but also uniquely relevant within the political spectrum. Since government representatives cannot possibly interact with all of their constituents, considerations for their gender and facial structure may play critical roles in elections or political appointments. Certain physical characteristics may grant aspiring government officials a distinct political advantage (or disadvantage) within certain political climates or when running for certain positions. Understanding a political leaders' facial prototype, and how those physical characteristics influence trait-based perceptions, may help align a more strategic and complimentary political message. The results

of Study 2 suggest that matching the right leader prototype with the current demands of the political environment may have important implications for political appointees, foreign ambassadors, committee chairmen, etc. For clarity, the intent is not to endorse appointment on physical characteristics alone, but rather to consider how different interpretations and levels of effectives may emerge around certain facial characteristics. Understanding how different leader stereotypes and prejudice may arise is important to counteract unintended consequences.

Finally, it is interesting that the same masculine characteristics that create perceptions of confidence and effectiveness (Olivola, Eubanks, & Lovelace, 2014) also generated inferences of toxic leadership. This is important for deciphering the positive and negative aspects associated with dominance, as this trait has been associated with both leader emergence (Foti & Hauenstein, 2007; Mann, 1959) and dark leadership (Judge et al., 2009). This duality also applies to NAR, as drive (Kirkpatrick and Locke, 1991) and achievement (House & Aditya, 1997) have also been linked to leader emergence. These findings reinforce the notion that characteristics that lead to perceptions of toxic leadership can also produce positive outcomes (e.g., goal attainment) for a unit or organization. Perhaps a leader's physical appearance is an important boundary condition as to whether behavioral dominance and the need for achievement are effective or "seen" as toxic leadership.

Limitations

There was a significant advantage to launching this study through MTurk, as it isolated the response conditions to a forum outside of the situational pressures and cues found within a standard organizational context. However, there are a few notable limitations that should be addressed in future studies to fully test the validity of the final detection scale. Specifically, the data collection efforts in this study only included followers. This limits awareness of how senior

leaders perceive subordinate leaders that leverage anti-subordinate leader behaviors. Understanding the perspective of superiors may provide a rich source of information for future research. However, the value of capturing leader perceptions was not considered a serious shortfall for developing a scale, as there is no need build a detection tool if higher level leaders already perceive their subordinate managers as toxic. Also, naivety is an important feature of survey research and leaders at higher levels do not represent a typical follower, as they may uniquely understand and respond to the scale items (Hunter, Bedell-Avers, & Mumford, 2007).

Assumptions were also made regarding automatic processing and the facial image response times decision criteria. Although prior research typically measures differences between automatic and controlled processing in milliseconds (Schneider & Schiffrin, 1977 Treisman & Gelade, 1980), greater liberty was deemed prudent for the facial perception reactions. It was reasonable to allocate 2-3 seconds per comparison in order to properly read the cue inducing prompts that accompanied each image set (attention check items that could further inhibit response times were also intermixed). Furthermore, each respondent was unfamiliar with the leader images presented in this study. As opposed to the common letter and word recognition assessments used in seminal studies on cognitive processes, these facial images were never before seen by the respondents and likely required more time to process since their features were not, in their entirety, previously perceived objects (Kosslyn, Ganis, & Thompson, 2001). Rather, Kosslyn et al. (2001) describe how perceptions of new stimuli can be combined and modified from mentally stored perceptual information of previously seen imagery. This top-down activation of mental schemas to infer behavioral tendencies of leaders may require greater reaction time than information derived from sensory perception alone. After the image preference was determined, it was reasonable to grant each respondent another 1-2 seconds to

simply touch or select the associated response dial under each image. Due to these conditions, confirming an automatic, gut-instinct response characteristic with milliseconds seemed unreasonable. Instead, select individuals were asked to dry-run the image section and were monitored, in person, for their average completion times. Their average, uninterrupted completion times for each question ranged between ~8-10 seconds. Thus, the 8 second lower bound for this range was assumed an appropriate threshold for determining instinctive response characteristics.

Third, and perhaps most important, was that the conditions of this study were restrictive in terms of assessing the process of toxic leadership. As noted in the definition, toxic leadership involves the systematic employment of behaviors. The cross-sectional nature of this study limited the ability to explicitly examine a series of activities over time. This research served to indicate the harmful potential of a leader, but did not definitively determine which leaders were toxic. A longitudinal design, which was not supported given the external constraints influencing this study, could better capture the frequency of the behaviors and their associated outcomes (e.g. derailment).

Notwithstanding the above limitations, a parsimonious, reliable, and ambiguous toxic leadership detection scale has been identified. The next step is to assess the actual validity of detecting toxic leadership within specific organizations. Accurately capturing the behaviors most indicative of the toxic leadership domains was a critical first step in solving the detection problem and providing a simple, psychometrically-sound tool for organizations and researchers. Examining this new scale through a future, longitudinal field study will help determine the levels of empathy and NAR that are most predictive of egoistic dominance over time.

Conclusion

Pre-existing literature targets common toxic behaviors and how these behaviors are linked to personality disorders. This research reinforces these notions, but also shows that physical characteristics can also play an important role under certain conditions. Most importantly, organizations have yet to settle on an effective toxic leader detection scale and the simple NAR and empathy relationships proposed in this study may have greater utility than some of the more complex theories (Cortina & DeShon, 1998). The detection gaps are true even for organizations that are highly susceptible to producing conducive environments and follower characteristics that allow toxic leaders to thrive. In fact, the US Marine Corps recently announced plans to launch a five year studied designed to assess whether measures related to emotional intelligence can help detect and remove harmful leaders (Seck, 2017). The development of this reliable detection scale, which contains a minimal amount of non-overt measures, can help solve the detection problem while providing an excellent launching point for future longitudinal studies.

Taking an evolutionary perspective, a leader's gender and facial structure create significant differences among follower perceptions and the following leader traits were inferred based solely on the leader's facial appearance: need for achievement recognition, egoistic dominance, and empathy. When followers have little opportunity to interact or observe leader behavior, they may rely more on image induced perceptions to assess the threat of toxic leadership. It is perhaps most important to consider the ramifications of these findings for leaders that typically have more distal relationships with their followers (e.g. chief executive

officers; leaders of large, hierarchical organizations; and politicians). Regardless of where leaders operate, an imposing physical appearance can unintentionally activate a hostile attribution bias (Hoobler & Brass, 2006) and undermine future leader-follower relationships.

Overall, these results supported the idea that empathy and the need for achievement recognition create an "ego gone wild" condition and, not only can we measure the behavioral tendencies of toxic leaders, but perhaps we can "see" them as well. These revelations can help organizations remove the shroud surrounding toxic leaders and break through any carefully concealed destructive techniques. Although it is difficult to determine whether the high-threat behavioral patterns or masculine appearances truly reflect a toxic leader, these indicators are useful for categorizing leaders by their potential for harming organizations and followers. These identification mechanisms can improve threat detection and pave the way for exploring useful interventions to stanch the flow of toxic leadership for a wide range of organizations.

References

Ali, F., Amorim, I. S., & Chamorro-Premuzic, T. (2009). Empathy deficits and trait emotional intelligence in psychopathy and Machiavellianism. *Personality and Individual Differences*, *47*(7), 758-762.

Antonakis, J., & Dalgas, O. (2009). Predicting elections: Child's play!. *Science*, *323*(5918), 1183-1183.

Antonakis, J., & Eubanks, D. L. (2017). Looking leadership in the face. *Current Directions in Psychological Science*, *26*(3), 270-275.

Aquino, K. 2000. Structural and individual determinants of workplace victimization: The effects of hierarchical status and conflict management style. *Journal of Management, 26*,171-193.

Ashforth, B. E. (1987). Organizations and the petty tyrant: An exploratory study. In *annual meeting of the Academy of Management, New Orleans, LA*.

Ashforth, B. E. 1994. Petty tyranny in organizations. *Human Relations, 47*, 755-778.

Avolio, B. J., & Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: A multi-level framework for examining the diffusion of transformational leadership. *Leadership Quarterly, 6*(2), 199-218.

Balota, D. A., Yap, M. J., Cortese, M. J., & Watson, J. M. (2008). Beyond mean response latency: Response time distributional analyses of semantic priming. *Journal of Memory and Language*, *59*(4), 495-523.

Bentz, V. J. (1985). *A view from the top: A thirty year perspective of research devoted to the discovery, description, and prediction of executive behavior.* Paper presented at the 93rd Annual Convention of the American Psychological Association, Los Angeles, CA.

Bligh, M. C., Kohles, J. C., Pearce, C. L., Justin, J. E., & Stovall, J. F. (2007). When the romance is over: Follower perspectives of aversive leadership. *Applied Psychology*, *56*(4), 528-557.

Bognar, A. J., (2014). *Targeting Destructive Narcissism: A new approach for identifying and eliminating toxic senior leaders in the U.S. Air Force. Air University (U.S.)*. Air War College. Retrieved from http://www.dtic.mil/dtic/tr/fulltext/u2/1019217.pdf

Bono, J. E., Braddy, P. W., Liu, Y., Gilbert, E. K., Fleenor, J. W., Quast, L. N., & Center, B. A. (2017). Dropped on the way to the top: Gender and managerial derailment. *Personnel Psychology*, *70*(4), 729-768.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin*, *56*(2), 81.

Campbell, J. P., Gasser, M. B., & Oswald, F. L. (1996). The substantive nature of job performance variability. *Individual differences and behavior in organizations*, *258*, 299.

Carter, D. R., DeChurch, L. A., Braun, M. T., & Contractor, N. S. (2015). Social network approaches to leadership: An integrative conceptual review. *Journal of Applied Psychology, 100,* 597–622.

Cascio, W. F., & Aguinis, H. (2005). Applied psychology in human resource management.

Chandler, D. E. Kram, K. E. Yip, J. (2011). An ecological systems perspective on mentoring at work: A review and future prospects. *The Academy of Management Annals, 5*(1), 519-570.

Conger, J. A. (1990). The dark side of leadership. *Organizational dynamics*, *19*(2), 44-55.

Coovert, M. D. & McNelis, K. (1988). The number of factors problem in factor analysis: A review and program. *Educational and Psychological Measureme*nt, 48, 687-692.

Cortina, J. M., & DeShon, R. P. (1998). Determining relative importance of predictors with the observational design. *Journal of Applied Psychology*, *83*(5), 798.

Darwin, C. (1859). On the origin of the species by natural selection.

Dawkins, R.C. (2006), *The Selfish Gene*, The 30th Anniversary Edition, Oxford, Oxford University Press.

Derue, D. S., Nahrgang, J. D., Wellman, N. E. D., & Humphrey, S. E. (2011). Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel psychology*, *64*(1), 7-52.

De Hoogh, A. H., & Den Hartog, D. N. (2008). Ethical and despotic leadership, relationships with leader's social responsibility, top management team effectiveness and subordinates' optimism: A multi-method study. *The Leadership Quarterly*, *19*(3), 297-311.

Dennet, D.C., (1996) Darwins's Dangerous Idea. Evolution and the Meaning of Life, London / New York, Penguin Books.

Department of the Army. (2012). Army Leadership. *Army Doctrine Publication 6-22*. Washington, DC.

Duffy, M. K., Ganster, D., & Pagon, M. 2002. Social undermining in the workplace. *Academy of Management Journal, 45*, 331-351.

Eby, L. T., Butts, M., Lockwood, A., & Simon, A. A. (2004). Protégés negative mentoring experiences: Construct development and nomological validation. *Personnel Psychology, 5*, 411-447.

Einarsen, S., Aasland, M. S., & Skogstad, A. (2007). Destructive leadership behaviour: A definition and conceptual model. *The Leadership Quarterly*, *18*(3), 207-216.

Erickson, A., Shaw, B., Murray, J., & Branch, S. (2015). Destructive leadership. *Organizational Dynamics*, *4*(44), 266-272.

Fabrigar, L. R., & Wegener, D. T. (2012). *Exploratory Factor Analysis: Understanding Statistics.* New York: Oxford University Press.

Fiedler, F. E. (1967). *A theory of leadership effectiveness.* New York: McGraw-Hill.

Flynn, G. (1999). Stop Toxic Leaders Before They Stop You! *Workforce.* 44-46.

Foti, R. J., Bray, B. C., Thompson, N. J., & Allgood, S. F. (2012). Know thy self, know thy leader: Contributions of a pattern-oriented approach to examining leader perceptions. *The Leadership Quarterly, 23*, 702–717.

Foti, R. J., & Hauenstein, N. (2007). Pattern and variable approaches in leadership emergence and effectiveness. *Journal of Applied Psychology*, *92*(2), 347.

French, J. R. P., & Raven, B. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies in social power* (pp. 150-167). Ann Arbor, MI: University of Michigan Press.

Gabriel, A. S., Daniels, M. A., Diefendorff, J. M., & Greguras, G. J. (2015). Emotional labor actors: A latent profile analysis of emotional labor strategies. *Journal of Applied Psychology*, *100*(3), 863.

Gaddis, B. H., & Foster, J. L. (2015). Meta-analysis of dark side personality characteristics and critical work behaviors among leaders across the globe: Findings and implications for leadership development and executive coaching. *Applied Psychology*, *64*(1), 25-54.

Gallus, J. A., Walsh, B. M., van Driel, M., Gouge, M. C., & Antolic, E. (2013). Intolerable cruelty: A multilevel examination of the impact of toxic leadership on U.S. military units and service members. *Military Psychology, 25*, 588-601.

Graen, G., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader–member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly, 6*(2), 219−247.

Graham, J. R., Harvey, C. R., & Puri, M. (2016). A corporate beauty contest. *Management Science, 63*(9), 3044-3056.

Green, J. E. (2014). Toxic Leadership in Educational Organizations. *Education Leadership Review*, *15*(1), 18-33.

Gruys, M. L., & Sackett, P. R. (2003). Investigating the dimensionality of counterproductive work behaviors. *International Journal of Selection and Assessment, 11*, 30-42.

Hannah, S. T., Schaubroeck, J., Avolio, B., Doty, J., Kozlowski, S., Lord, R., & Trevino, L. (2010). *ACPME Technical Report 2010-01: MNF-I Excellence in Character and Ethical leadership (EXCEL) Study.* Army Center of Excellence for the Professional Military Ethic.

Harter, J. K., & Schmidt, F. L. (2008). Conceptual versus empirical distinctions among constructs: Implications for discriminant validity. *Industrial and Organizational Psychology*, *1*(1), 36-39.

Henrich, J. (2016). *The secret of our success: How learning from others drove human evolution, domesticated our species, and made us smart.* Princeton: Princeton University Press.

Heppell, T. (2011). Toxic leadership: Applying the Lipman-Blumen model to political leadership. *Representation*, *47*(3), 241-249.

Hoel, H., & Cooper, C. L. (2001). Origins of bullying. *Building a Culture of Respect-Managing Bullying at Work*, 3-21.

Hogan, R., & Hogan, J. (2001). Assessing leadership: A view from the dark side. *International Journal of Selection and Assessment, 9*, 40-51.

Hogan, J., Hogan, R., & Kaiser, R. B. (2010). Management derailment. *APA handbook of industrial and organizational psychology*, *3*, 555-575.

Hogan, J., & Holland, B. (2003). Using theory to evaluate personality and job-performance relations: A socioanalytic perspective. *Journal of Applied Psychology*, *88*(1), 100.

Hogan, R., & Kaiser, R. (2005). What we know about leadership. *Review of General Psychology, 9*, 169−180.

Hogan, J., & Roberts, B. W. (1996). Issues and non-issues in the fidelity-bandwidth trade-off. *Journal of Organizational Behavior*, 627-637.

Hollander, E. P. (1985). Leadership and power. *The handbook of social psychology*, *2*, 485-537.

Hollander, E. P., & Julian, J. W. (1969). Contemporary trends in the analysis of leadership processes. *Psychological bulletin*, *71*(5), 387.

Hoobler, J. M., & Brass, D. J. (2006). Abusive supervision and family undermining as displaced aggression. *Journal of Applied Psychology*, *91*(5), 1125.

Horney, K. (1950). *Neurosis and human growth*. New York, NY: Norton.

House, R. J., & Aditya, R. N. (1997). The social scientific study of leadership: Quo vadis?. *Journal of management*, *23*(3), 409-473.

Hunter, S. T., Bedell-Avers, K. E., & Mumford, M. D. (2007). The typical leadership study: Assumptions, implications, and potential remedies. *The Leadership Quarterly*, *18*, 435-446.

Inesi, M. E., & Cable, D. M. (2015). When accomplishments come back to haunt you: The negative effect of competence signals on women's performance evaluations. *Personnel Psychology*, *68*(3), pp. 615-657.

James, L. R., & LeBreton, J. M. (2012). *Assessing the implicit personality through conditional reasoning.* Washington, DC: American Psychological Association.

James, L. R., LeBreton, J. M., Mitchell, T. R., Smith, D. R., Desimone, J. A., Cookson, R., & Lee, H. J. (2013). Use of conditional reasoning to measure the power motive. In J. M. Cortina & R. S. Landis (Eds.), Modern research methods for the study of behavior in organizations (pp. 233-263). New York: Routledge.

Judge, T. A., & Cable, D. M. (2004). The effect of physical height on workplace success and income: preliminary test of a theoretical model. *Journal of Applied Psychology*, *89*(3), 428.

Judge, T. A., Piccolo, R. F. Kosalka, T. (2009). The bright and dark sides of leader traits: A review and theoretical extension of the leader trait paradigm. *The Leadership Quarterly*, *20*. 855-875.

Kaiser, R. B., LeBreton, J. M., & Hogan, J. (2015). The dark side of personality and extreme leader behavior. *Applied Psychology: An International Review*, 64, 55-92.

Kanter, R.M. (1977). *Men and women of the corporation*. New York: Basic Books.

Katz, D., & Kahn, R. L. (1978). The social psychology of organizations. New York: John Wiley and Sons, Inc.

Kellerman, B. (2004). *Bad Leadership: What it is, how it happens, why it matters.* Boston, MA: Harvard Business Press.

Kellett, J. B., Humphrey, R. H., & Sleeth, R. G. (2002). Empathy and complex task performance: Two routes to leadership. *The Leadership Quarterly, 13*(5), 523−545.

Kirkpatrick, S. A., & Locke, E. A. (1991). Leadership: do traits matter?. The executive, 5 (2), 48-60.

Krasikova, D., Green, S., & LeBreton, J. M. (2013). Destructive leadership: A theoretical review, integration, and future research agenda. *Journal of Management, 39*, 1308-1338.

Kleinbaum, D. G., Kupper, L. L., Nizam, A., & Rosenberg, E. S. (2013). *Applied regression analysis and other multivariable methods*. Cengage Learning.

Kline, R.B. (2005), Principles and Practice of Structural Equation Modeling (2nd Edition ed.). New York: The Guilford Press

Kosslyn, S. M., Ganis, G., & Thompson, W. L. (2001). Neural foundations of imagery. *Nature Reviews Neuroscience*, *2*(9), 635.

Landers, R. N., & Behrend, T. S. (2015). An inconvenient truth: Arbitrary distinctions between organizational, Mechanical Turk, and other convenience samples. *Industrial and Organizational Psychology*, *8*(2), 142-164.

Lanza, S. T., Tan, X., & Bray, B. C. (2013). Latent class analysis with distal outcomes: A flexible model-based approach. *Structural Equation Modeling, 20*, 1–26.

Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes*, *112*(2), 112-125.

Lindsay, D., L., Watola, D. J., & Lovelace, J. (2016). Why negative leadership matters: Implications for leader development in the military. In D. Watola & D. Woycheshin (Eds.), *Negative Leadership: International Perspectives*, (pp. 15-42). Kingston, Ontario: Canadian Defence Academy Press.

Linke, L., Saribay, S. A., & Kleisner, K. (2016). Perceived trustworthiness is associated with position in a corporate hierarchy. *Personality and Individual Differences*, *99*, 22-27.

Lipman-Blumen, J. (2005). *The allure of toxic leaders: Why we follow destructive bosses and corrupt politicians – and how we can survive them*. New York: Oxford University Press.

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika*, *88*(3), 767-778.

Lord, R. G., Foti, R. J., & De Vader, C. L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational behavior and human performance*, *34*(3), 343-378.

Ludwig, D. C., & Longenecker, C. O. (1993). The Bathsheba syndrome: The ethical failure of successful leaders. *Journal of Business Ethics*, *12*(4), 265-273.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological methods*, *1*(2), 130.

Mann, R. D. (1959). A review of the relationships between personality and performance in small groups. *Psychological bulletin*, *56*(4), 241-270.

Martinko, M. J., Harvey, P., Brees, J. R., & Mackey, J. (2013). A review of abusive supervision research. *Journal of Organizational Behavior*, *34*(S1).

Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, *50*(4), 370.

Mawritz, M., Mayer, D., Hoobler, J., Wayne, S., & Marinova, S. (2012). A trickle down model of abusive supervision. *Personnel Psychology*, *65*, 325-357.

McCall, M. W., & Lombardo, M. M. (1983). *Off the track: Why and how successful executives get derailed* (21). Center for Creative Leadership.

McGregor, D. (1960). Theory X and theory Y. *Organization theory*, *358*, 374.

Mitchell, M. S., & Ambrose, M. L. (2012). Employees' behavioral reactions to supervisor aggression: An examination of individual and situational factors. *Journal of Applied Psychology*, *97*(6), 1148.

Morgeson, F. P., Mitchell, T. R., & Liu, D. (2015). Event system theory: An event-oriented approach to the organizational sciences. A*cademy of Management Review*, *40*, 515–537.

Namie, G., & Namie, R. (2000). Workplace bullying: The silent epidemic. *Employee Rights Quarterly*, *1*(2), 1-12.

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill.

Nunnally, J. C., & Bernstein, I. H. (1994). Psychological theory. *New York, NY: MacGraw-Hill*.

Olivola, C. Y., Eubanks, D. L., & Lovelace, J. B. (2014). The many (distinctive) faces of leadership: Inferring leadership domain from facial appearance. *The Leadership Quarterly*, *25*(5), 817-834.

Olivola, C. Y., Funk, F., & Todorov, A. (2014). Social attributions from faces bias human choices. *Trends in Cognitive Sciences*, *18*(11), 566-570.

Padilla, A., Hogan, R., & Kaiser, R. (2007). The toxic triangle: Destructive leaders, susceptible followers, and conducive environments. *The Leadership Quarterly, 18*, 176-194.

Paulhus, D., & Williams, K. (2002). The dark triad of personality: Narcissism, machiavellianism, and pyschopathy. *Journal of Research in Personality*, *36*(6), 556-563.

Peterson, D. B. (2010). Executive coaching: A critical review and recommendations for advancing the practice. *APA handbook of industrial and organizational psychology*, *2*, 527-566.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The leadership quarterly*, *1*(2), 107-142.

Rahm, E., & Do, H. H. (2000). Data cleaning: Problems and current approaches. *IEEE Data Engineering Bulletin*, *23*(4), 3-13.

Reed, G. E. (2004). Toxic leadership. *Military Review*.

Reed, G. E., & Bullis, R. C. (2009). The impact of destructive leadership on senior military officers and civilian employees. *Armed Forces & Society*, *36*(1), 5-18.

Reed, G.E., & Olsen, R.A. (2010). Toxic leadership: Part deux. *Military Review*, *Nov-Dec*, 58-64.

Resick, C. J., Whitman, D. S., Weingarden, S. M., & Hiller, N. J. (2009). The bright-side and the dark-side of CEO personality: examining core self-evaluations, narcissism, transformational leadership, and strategic influence. *Journal of Applied Psychology*, *94*(6), 1365-1381.

Richardson, D. R., Hammock, G. S., Smith, S. M., & Gardner, W. (1994). Empathy as a cognitive inhibitor of interpersonal aggression. *Aggressive Behavior, 20*, 275–289.

Ritter, B. A., & Lord, R. G. (2007). The impact of previous leaders on the evaluation of new leaders: an alternative to prototype matching. *Journal of Applied Psychology*, *92*(6), 1683.

Sadri, G., Weber, T. J., & Gentry, W. A. (2011). Empathic emotion and leadership performance: An empirical analysis across 38 countries. *Leadership Quarterly, 22*, 818-830.

Salovey, P., & Mayer, J. D. (1990). Emotional Intelligence. *Imagination, Cognition and Personality, 9*(3), 185-211.

Schat, A. C. H., Desmarais, S., & Kelloway, E. K. (2006). Exposure to workplace aggression from multiple sources: Validation of a measure and test of a model. *Unpublished manuscript, McMaster University, Hamilton, Canada*, 331-351.

Schat, A. C., Frone, M. R., & Kelloway, E. K. (2006). Prevalence of workplace aggression in the US workforce: Findings from a National Study. In E. K. Kelloway, J. Barling, & J. Hurrell, *Handbook of Workplace Violence* (pp. 47-89). Thousand Oaks, CA: Sage Publications.

Schmidt, A.A. (2008). Development and validation of the toxic leadership scale. (Unpublished masters thesis.) University of Maryland, College Park, MD.

Schmidt, A.A. & Hanges, P.J. (2009). Development and validation of the toxic leadership scale. In M. N. Deese, M. Wang, & R. R. Sinclair (Chairs), Destructive Leadership: Measurement, Antecedents, and Outcomes. Symposium presented at the 24th Annual Society for Industrial and Organizational Psychology Conference, New Orleans, LA.

Schneider, W., & Shiffrin, R. M. (1977). Controlled and automatic human information processing: I. Detection, search, and attention. *Psychological review*, *84*(1), 1.

Schyns, B., & Schilling, J. (2013). How bad are the effects of bad leaders? A meta-analysis of destructive leadership and its outcomes. *The Leadership Quarterly, 24*(1), 138-158.

Seck, H. H. (2017) The Marine Corps Wants A 'Toxic Leadership Test' To Aid Promotion Decisions. *Task & Purpose.* Retreived from https://taskandpurpose.com/marine-corps-toxic-leadership-test/

Sell, A., Cosmides, L., Tooby, J., Sznycer, D., Von Rueden, C., & Gurven, M. (2009). Human adaptations for the visual assessment of strength and fighting ability from the body and face. *Proceedings of the Royal Society of London B: Biological Sciences*, *276*(1656), 575-584.

Shaffer, J. A., DeGeest, D., & Li, A. (2016). Tackling the problem of construct proliferation: A guide to assessing the discriminant validity of conceptually related constructs. *Organizational Research Methods*, *19*(1), 80-110.

Shamir, B. (2007). From passive recipients to active co-producers: Followers' roles in the leadership process. In B. Shamir, R, Pillai, M. Bligh, & M. Uhl-Bien, (Eds.), *Follower-Centered Perspectives on Leadership* (pp. 9-34) Greenwich, CT: IAP.

Soeters, J. L., & Recht, R. (2001). Convergence or divergence in the multinational classroom? Experiences from the military. *International Journal of intercultural relations*, *25*(4), 423-440.

Spain, S. M., Harms, P., & LeBreton, J. M. (2014). The dark side of personality at work. *Journal of organizational behavior*, *35*(S1).

Spector, P. E. & Eatough, E. M. (2013). Quantitative self-report methods in occupational health psychology research. In M. Wang, R. Sinclair, and L. Tetrick (Eds.). Research methods in occupational health psychology (pp. 248-267). Boca Raton, FL: Taylor & Francis.

Spector, P. E., & Fox, S. (2005). A model of counterproductive work behavior. In S. Fox, & P. E. Spector (Eds.). *Counterproductive workplace behavior: Investigations of actors and targets* (pp. 151-174). Washington, DC: APA

Speer, A. B., Christiansen, N. D., Goffin, R. D., & Goff, M. (2014). Situational bandwidth and the criterion-related validity of assessment center ratings: Is cross-exercise convergence always desirable?. *Journal of Applied Psychology*, *99*(2), 282.

Steele, J. P. (2011). *Center for Army Leadership, Technical Report 2011-3: Antecedents and consequences of toxic leadership in the US Army - A two year review and recommended solutions.* Fort Leavenworth, Kansas: Leadership Research Assessment and Doctrine Division.

Sutton, R.I. (2007). *The No Asshole Rule. Building a Civilized Workplace and Surviving One That Isn't*. New York: Business Plus.

Tepper, B. J. (2000). Consequences of abusive supervision. *The Academy of Management Journal*, 178-190.

Tepper, B. J. (2007). Abusive supervision in work organizations: Review, synthesis, and research agenda. *Journal of Management*, 261-289.

Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, *88*(3), 500.

Treisman, A. M., & Gelade, G. (1980). A feature-integration theory of attention. *Cognitive psychology*, *12*(1), 97-136.

Uhlmann, Leavitt, Menges, Koopman, Howe, Johnson (2012). Getting explicit about the implicit: A taxonomy of implicit measures and guide for their use in organizational research. *Organizational Research Methods, 15,* 553-601.

Van Vugt, M., & Grabo, A. E. (2015). The many faces of leadership: an evolutionary-psychology approach. *Current Directions in Psychological Science*, *24*(6), 484-489.

Vreja, L. O., Balan, S., & Bosca, L. C. (2016). An Evolutionary Perspective on Toxic Leadership. *Management and Economics Review*, *1*(2), 217-228.

Wheeler, J. G., George, W. H., & Dahl, B. J. (2002). Sexually aggressive college males: Empathy as a moderator in the ‘‘Confluence Model” of sexual aggression. *Personality and Individual Differences, 33,* 759–775.

Whicker, M. (1996). *Toxic leaders: When organizations go bad.* Westport, CT: Praeger

Whicker, M. (1997). Minimizing the damage of a "toxic leader." *PA Times, 20*(1), 1-2.

Yukl, G. (2006). *Leadership in Organizations, 6th Edition.* Upper Saddle River: Pearson Education Inc.

Zapf, D., Einarsen, S., Hoel, H., & Vartia, M. (2003). Empirical findings on bullying in the workplace. In S. Einarsen, H. Hoel, D. Zapf, & C. L. Cooper (Eds.), *Bullying and emotional abuse in the workplace. International perspectives in research and practice* (pp. 103−126). London: Taylor & Francis.

Appendices

Appendix A: Need for Achievement Recognition Initial Item Pool

Achievement Recognition Items Pooled from Research Realted to Toxic Leadership:

	Reflects NAR[a]		Response Distortion[b]	
Achievement Recognition Items Pooled from Research Related to Toxic Leadership:	**AVG**	**SD**	**AVG**	**SD**
Acting in a self-serving, arrogant manner (Steele, 2011)	2.4	1.14	1.4	0.89
Focusing on visible short-term accomplishments (Steele, 2011)	**2.6**	**1.14**	**3.4**	**0.55**
Provides superiors with impressive, articulate presentations, & glowing updates (Steele, 2011)	**1.6**	**0.89**	**2.6**	**1.14**
Ensuring an immaculate workspace (Steele, 2011)	**2.8**	**0.45**	**3.2**	**1.10**
Motivated primarily by self-interest (Steele, 2011)	**1.8**	**1.30**	**2.4**	**1.52**
Has a sense of personal entitlement (Schmidt, 2008)	2.2	0.84	2.6	1.14
Thrives on compliments and personal accolades (Schmidt, 2008)	**1**	**0.00**	**2.6**	**1.14**
Drastically changes his/her demeanor when his/her supervisor is present (Schmidt, 2008)	1.6	0.55	2	1.22
Denies responsibility for mistakes made in his/her unit (Schmidt, 2008)	2	0.71	2	1.41
Will only offer assistance to people who can help him/her get ahead (Schmidt, 2008)	1.8	0.45	1.8	1.30
Accepts credit for successes that do not belong to him/her (Schmidt, 2008)	1.2	0.45	2	1.41
Acts only in the best interest of his/her next promotion (Schmidt, 2008)	1	0.00	1.8	1.30
Displays self-aggrandizement (Ashforth, 1987 1994)	1	0.00	1.6	0.89
Attempts to increase self-worth (Ashforth, 1987 1994)	**2.4**	**0.55**	**2.8**	**1.30**
Seeks personal gain (Ashforth, 1987 1994)	**2.4**	**0.89**	**2.8**	**1.10**
Desires recognition (Ashforth, 1987 1994)	**1**	**0.00**	**2.8**	**0.84**
Establishes scapegoats (Ashforth, 1987 1994)	2.2	0.84	1.8	1.30
Seek attention & affection (Whicker, 1996 1997)	**2.2**	**0.45**	**2.8**	**0.84**
Demands attention (Whicker, 1996 1997)	1.8	0.84	2	1.22
Obsessed with their own psychological safety (Whicker, 1996 1997)	3	1.22	2.8	1.30
Displays selfish values (Whicker, 1996 1997)	2	0.71	1.6	1.34
Excessively brags about unfounded achievements (Whicker, 1996 1997)	1.2	0.45	1.6	1.34
Seeks opportunities to self-promote (Whicker, 1996 1997)	1.6	0.89	2.2	1.30
Constantly compare themselves to others (Whicker, 1996 1997)	**2.6**	**0.89**	**3.2**	**0.84**
Seek consensus w/superiors (Whicker, 1996 1997)	**2.2**	**0.84**	**3.4**	**0.55**
Act egotistically (Whicker, 1996 1997)	2.4	1.14	1.6	0.89
Share a competitive vision (Whicker, 1996 1997)	3	0.71	3.6	0.55
Win at any cost (Whicker, 1996 1997)	**1.8**	**0.84**	**2.6**	**1.14**
Jealous when outperformed (Whicker, 1996 1997)	1.2	0.45	2.2	1.30

[a]SME indication from 1-4 (1 is most reflects; 4 is least reflects) in which they believe the item reflects NAR
[b]SME indication from 1-4 (1 is the most likely; 4 is the least likely) the degree in which the item might induce response distortion
Bold font indicates included on the pilot survey

Appendix B: Empathy Initial Item Pool

Empathy Items Items Pooled from Research Realted to Toxic Leadership:

	Reflects Empathy[a]		Response Distortion[b]	
Empathy Items Pooled from Research Related to Toxic Leadership:	**AVG**	**SD**	**AVG**	**SD**
Sees things from another person's point of view (Steele, 2011)	**1**	**0.00**	**2.4**	**1.14**
Allows open communication (Steele, 2011)	**2.8**	**0.45**	**2.6**	**1.34**
Prepare others for success (Steele, 2011)	**3**	**0.71**	**2.8**	**0.84**
See subordinates as people and not disposable instruments (Steele, 2011)	1.6	0.55	1.8	1.10
Respects the privacy of subordinates (Schmidt, 2008)	2.8	0.84	2.8	1.10
Pays attention to ideas that are contrary to his/her own (Schmidt, 2008)	**1.8**	**0.84**	**2.6**	**0.89**
Is considerate of subordinates' commitments outside of work (Schmidt, 2008; Tepper, 2000)	**1.2**	**0.45**	**3**	**1.00**
Stays close to and personally interacts with followers (Ashforth, 1987 1994)	**2.2**	**0.45**	**2.8**	**1.10**
Values others (Ashforth, 1987 1994)	**1.8**	**0.45**	**2.4**	**1.14**
Driven to validate others (Whicker, 1996 1997)	**2**	**1.00**	**3.2**	**0.84**
Views followers (and co-workers) as allies or partners (Whicker, 1996 1997)	**2.2**	**0.84**	**3**	**0.71**
Shows consideration for others (Ashforth, 1987 1994)	**1**	**0.00**	**2.4**	**1.14**
Expresses anger at subordinates for unknown reasons (Schmidt, 2008) Reverse Scored	2.8	1.10	1.6	1.34
Jealous when outperformed (Whicker, 1996 1997)	1.2	0.45	2.2	1.30

[a]SME indication from 1-4 (1 is most reflects; 4 is least reflects) in which they believe the item reflects Empathy
[b]SME indication from 1-4 (1 is the most likely; 4 is the least likely) the degree in which the item might induce response distortion
Bold font indicates included on the pilot survey

Appendix C: Egoistic Dominance Initial Item Pool

Egoistic Dominance Items Items Pooled from Research Realted to Toxic Leadership:

	Reflects Egoistic Dominance[a]	
Egoistic Dominance Items Pooled from Research Related to Toxic Leadership:	**AVG**	**SD**
Acts aggressively toward others (Steele, 2011)	2	1.00
Intimidates and denigrating others (Steele, 2011)	**1.2**	**0.45**
Avoids subordinates (Steele, 2011)	3.4	0.55
Tears others down and denigrates followers (Whicker, 1996 1997)	**1**	**0.00**
Treats followers like objects (Ashforth, 1987 1994)	**1.8**	**0.84**
Ridicules subordinates (Schmidt, 2008; Tepper, 2000)	**1**	**0.00**
Speaks poorly about subordinates to other people in the workplace (Schmidt, 2008; Tepper, 2000)	**1.4**	**0.55**
Publicly belittles subordinates/others (Schmidt, 2008; Tepper, 2000; Ashforth, 1987 1994)	**1**	**0.00**
Reminds subordinates of their past mistakes and failures (Schmidt, 2008; Tepper, 2000)	**1.6**	**0.55**
Tells subordinates they are incompetent (Schmidt, 2008; Tepper, 2000)	**1.2**	**0.45**
Controls how subordinates complete their tasks (Schmidt, 2008)	2.4	1.14
Does not permit subordinates to approach goals in new ways (Schmidt, 2008)	2.4	1.14
Determines all decisions in the unit whether they are important or not (Schmidt, 2008)	2.2	1.10
Has explosive outbursts (Schmidt, 2008)	2.4	1.14
Uses coercive techniques (Ashforth, 1987 1994)	**1.8**	**0.84**
Reaffirms legitimacy/control (Ashforth, 1987 1994)	**1.6**	**0.55**
Shows power thru corruption (Ashforth, 1987 1994)	**1.4**	**0.89**
Bestows arbitrary punishments (Ashforth, 1987 1994)	**1.8**	**0.84**
Attributes subordinate success to managerial control (Ashforth, 1987 1994)	**1.8**	**0.45**
Desires control, dominance, and compliance (Ashforth, 1987 1994)	**1.2**	**0.45**
Discourages initiative (Ashforth, 1987 1994)	2.4	0.55
Micro-manages followers (Whicker, 1996 1997; Ashforth, 1987 1994)	3	0.71
Manipulate opinions (Whicker, 1996 1997)	2.2	1.10
Control communications (Whicker, 1996 1997)	2	0.71
Demands obedience (Whicker, 1996 1997)	**1**	**0.00**
Engages in aggressive posturing, chest-puffing (Whicker, 1996 1997)	**1.2**	**0.45**
Dominates through politics (Whicker, 1996 1997)	**1.8**	**0.84**
Acts angry & pugnacious (Whicker, 1996 1997)	2.8	0.84
Appears mad at the world (Whicker, 1996 1997)	3	0.71
Displays Inappropriate outbursts (Whicker, 1996 1997)	2.4	1.14

[a]SME indication from 1-4 (1 is most reflects; 4 is least reflects) in which they believe the item reflects Egoistic Dominance
Bold font indicates included on the pilot survey

Appendix D: Toxic Leadership Survey (NAR Measures)

Supervisor/Leader Assessment

Instructions: This page contains statements to assess the perspective you had of **your most recent (or current) supervisor or leader**. Please rate how much you personally agree or disagree with these statements using the following scale: (1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree (5) strongly agree. Please circle the most appropriate number; there is no right or wrong answer.

The following statements accurately describe my current (or most recent) supervisor/leader:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1) Motivated primarily by self-interest	1	2	3	4	5
2) Focused on visible short-term mission accomplishment	1	2	3	4	5
3) Consumed with providing superiors with impressive, articulate presentations, glowing updates	1	2	3	4	5
4) Ensures an immaculate workplace	1	2	3	4	5
5) Thrives on compliments and personal accolades	1	2	3	4	5
6) Desires recognition	1	2	3	4	5
7) Seeks attention & affection	1	2	3	4	5
8) Seeks consensus w/superiors	1	2	3	4	5
9) Attempts to increase self-worth	1	2	3	4	5
10) Seeks personal gain	1	2	3	4	5
11) Constantly compares him/herself to others	1	2	3	4	5
12) Willing to win at any cost	1	2	3	4	5

Items bolded above were insufficient measures of NAR and removed after the pilot.

Appendix E: Toxic Leadership Survey (Empathy Measures)

Supervisor/Leader Assessment

Instructions: This page contains statements to assess the perspective you had of **your most recent (or current) supervisor or leader**. Please rate how much you personally agree or disagree with these statements using the following scale: (1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree (5) strongly agree. Please circle the most appropriate number; there is no right or wrong answer.

My current (or most recent) supervisor/leader was genuinely able to…

	Strongly Disagree	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) See things from another person' point of view	1	2	3	4	5
2) Allow open communication	1	2	3	4	5
3) Prepare others for success	1	2	3	4	5
4) View followers (and co-workers) as partners	1	2	3	4	5
5) Is considerate of subordinates' commitments outside of work	1	2	3	4	5
6) Pay attention to ideas that are contrary to his/her own	1	2	3	4	5
7) Show consideration for others	1	2	3	4	5
8) Stay close to and personally interacts with followers	1	2	3	4	5
9) Value others	1	2	3	4	5
10) Show they are driven to validate others	1	2	3	4	5

Appendix F: Toxic Leadership Survey (Egoistic Dominance Measures)

Supervisor/Leader Assessment

Instructions: This page contains statements to assess the perspective you had of **your most recent (or current) supervisor or leader**. Please rate how much you personally agree or disagree with these statements using the following scale: (1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree (5) strongly agree. Please circle the most appropriate number; there is no right or wrong answer.

My current (or most recent) supervisor/leader…

	Strongly Disagree	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Behaved aggressively toward others; denigrated and intimidated subordinates	1	2	3	4	5
2) Hoarded information and job tasks	1	2	3	4	5
3) Blamed others for their own problems	1	2	3	4	5
4) Overly criticized work that was done well	1	2	3	4	5
5) Spoke poorly about subordinates to other people in the workplace	1	2	3	4	5
6) Publicly belittled subordinates/others	1	2	3	4	5
7) Told subordinates they were incompetent	1	2	3	4	5
8) Used coercive techniques	1	2	3	4	5
9) Showed power through corruption	1	2	3	4	5
10) Demanded obedience	1	2	3	4	5
11) Engaged in aggressive posturing, chest-puffing	1	2	3	4	5
12) Desires control, dominance, and compliance	1	2	3	4	5
13) Dominates through politics	1	2	3	4	5
14) Attributed subordinate success to managerial control	1	2	3	4	5
15) Bestowed arbitrary punishments	1	2	3	4	5

Appendix G: Construct Validity – Transformational and OCB Facet Measures

Supervisor/Leader Assessment

Instructions: This page contains three sets of statements to assess the perspective you had of **your most recent (or current) supervisor or leader**. Please rate how much you personally agree or disagree with these statements using the following scale: (1) strongly disagree (2) disagree (3) neither agree or disagree (4) agree (5) strongly agree. Please circle the most appropriate number; there is no right or wrong answer.

My current (or most recent) supervisor/leader…

Individualized Consideration Items (Transformational Facet)	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Acts without considering my feelings *(reverse scored)*	1	2	3	4	5
2) Shows respect for my personal feelings	1	2	3	4	5
3) Behaves in a manner thoughtful of my personal needs	1	2	3	4	5
4) Treats me without considering my personal needs *(reverse scored)*	1	2	3	4	5
Courtesy Items (Organizational Citizenship Facet)	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Takes steps to try to prevent problems with other workers	1	2	3	4	5
2) Is mindful of how his/her behavior affects other people's jobs	1	2	3	4	5
3) Does not abuse the rights of others	1	2	3	4	5
4) Tries to avoid creating problems for coworkers	1	2	3	4	5
5) Considers the impact of his/her actions on coworkers	1	2	3	4	5
High Performance Expectation Items (Transformational Facet)	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Shows us that he/she expects a lot from us	1	2	3	4	5
2) Insists on only the best performance	1	2	3	4	5
3) Will not settle for second best	1	2	3	4	5
Provides appropriate model (Transformational Facet)	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Leads by "doing" rather than simply by telling	1	2	3	4	5
2) Provides a good model for me to follow	1	2	3	4	5
3) Leads by example	1	2	3	4	5

Appendix H: Construct Validity – Narcissism and Self-Promotion Facet Measures

Supervisor/Leader Assessment

Instructions: This page contains three sets of statements to assess the perspective you had of **your most recent (or current) supervisor or leader**. Please rate how much you personally agree or disagree with these statements using the following scale: (1) strongly disagree (2) disagree (3) neither agree or disagree (4) agree (5) strongly agree. Please circle the most appropriate number; there is no right or wrong answer.

My current (or most recent) supervisor/leader…

Narcissism Items (Schmidt, 2008, Scale)	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Has a sense of personal entitlement	1	2	3	4	5
2) Thinks that he/she is more capable than others	1	2	3	4	5
3) Assumes that he/she is destined to enter the highest ranks of my organization	1	2	3	4	5
4) Believes that he/she is an extraordinary person	1	2	3	4	5
Self-Promotion Items (Schmidt, 2008, Scale)	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1) Denies responsibility for mistakes made in his/her unit	1	2	3	4	5
2) Drastically changes his/her demeanor when his/her supervisor is present	1	2	3	4	5
3) Accepts credit for successes that do not belong to him/her	1	2	3	4	5
4) Acts only in the best interest of his/her next promotion	1	2	3	4	5
5) Will only offer assistance to people who can help him/her get ahead	1	2	3	4	5

Appendix I: Pilot Results for Egoistic Dominance Scale Reliability (*n* = 57)

Reliability Statistics	
Cronbach's Alpha	Items
.967	15

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Ego1	30.79	218.348	.853	.848	.963
Ego2	30.91	225.653	.779	.750	.965
Ego3	30.72	219.206	.805	.835	.964
Ego4	30.74	226.269	.759	.791	.965
Ego5	30.81	218.694	.874	.837	.963
Ego6	31.04	223.606	.811	.765	.964
Ego7	31.11	228.239	.700	.724	.966
Ego8	30.88	221.895	.894	.894	.963
Ego9	31.09	224.903	.751	.835	.965
Ego10	30.46	221.860	.800	.762	.964
Ego11	30.91	223.153	.854	.887	.963
Ego12	30.44	222.929	.755	.723	.965
Ego13	30.89	223.239	.775	.767	.965
Ego14	30.39	221.170	.755	.709	.965
Ego15	30.84	223.135	.816	.860	.964

Appendix J: Pilot Results for Need for Achievement Recognition Scale Reliability (*n* = 57)

Reliability Statistics	
Cronbach's Alpha	Items
.894	12

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
NAR1	33.53	87.611	.618	.546	.884
NAR2	33.54	90.288	.523	.405	.889
NAR3	33.46	88.574	.601	.552	.885
NAR4	***33.28***	***95.206***	***.294***	***.427***	***.901***
NAR5	33.42	85.641	.695	.697	.880
NAR6	33.32	86.577	.670	.615	.881
NAR7	33.82	85.254	.707	.690	.879
NAR8	***33.32***	***92.327***	***.437***	***.397***	***.893***
NAR9	33.37	84.273	.768	.680	.876
NAR10	33.25	84.510	.721	.635	.878
NAR11	34.00	88.929	.595	.531	.885
NAR12	33.68	87.470	.617	.596	.884

Note: Bolded and italicized items indicate problematic items with item-total correlations < .5

Appendix K: Pilot Results for Empathy Scale Reliability (*n* = 57)

Reliability Statistics	
Cronbach's Alpha	Items
.950	10

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EMP1	32.00	80.464	.873	.815	.941
EMP2	31.70	81.213	.725	.691	.947
EMP3	31.96	80.320	.702	.614	.948
EMP4	32.33	77.083	.844	.784	.942
EMP5	32.07	81.066	.690	.556	.949
EMP6	32.23	79.893	.766	.710	.945
EMP7	32.00	78.964	.843	.736	.942
EMP8	31.96	81.463	.762	.649	.945
EMP9	31.84	78.564	.883	.821	.940
EMP10	32.11	79.489	.802	.748	.944

Appendix L: Pilot EFA Results of the Full Detection Scale with Three Subscales (*n* = 57)

Pattern Matrix for Three-Factor EFA Solution

Scale Items	Factor 1: Egoistic Dominance	Factor 2: Empathy	Factor 3 NAR
Ego1	.895		
Ego2	.826		
Ego3	.495		
Ego4	.328		
Ego5	.745		
Ego6	.592		
Ego7	.763		
Ego8	.831		
Ego9	.963		
Ego10	.774		
Ego11	.661		
Ego12	.528		
Ego13	.477		
Ego14	.477		
Ego15	.521		
Emp1		.877	
Emp2		.599	
Emp3		.823	
Emp4		.827	
Emp5		.678	
Emp6		.806	
Emp7		.755	
Emp8		.837	
Emp9		.841	
Emp10		.828	
NAR1			-.494
NAR2			-.591
NAR3			-.653
NAR5			-.666
NAR6			-.767
NAR7			-.715
NAR9			-.766
NAR10			-.685
NAR11			-.427
NAR12			-.418

Appendix M: Study 1 Results for Egoistic Dominance Scale Reliability (*n* = 357)

Reliability Statistics	
Cronbach's Alpha	Items
.965	15

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Ego1	29.54	187.103	.853	.817	.961
Ego2	29.54	191.794	.779	.718	.963
Ego3	29.38	187.456	.805	.790	.962
Ego4	29.38	188.050	.759	.793	.962
Ego5	29.37	185.744	.874	.814	.962
Ego6	29.54	186.716	.811	.829	.961
Ego7	29.62	189.107	.700	.802	.962
Ego8	29.45	186.181	.894	.842	.961
Ego9	29.68	189.593	.751	.780	.962
Ego10	29.23	187.123	.800	.778	.962
Ego11	29.60	188.516	.854	.820	.962
Ego12	29.03	187.331	.755	.722	.964
Ego13	29.44	187.590	.775	.798	.962
Ego14	29.16	188.968	.755	.721	.963
Ego15	29.57	190.217	.816	.815	.962

Appendix N: Study 1 Results for NAR Scale Reliability (*n* = 357)

Reliability Statistics	
Cronbach's Alpha	Items
.906	10

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
NAR1	26.12	63.666	.707	.542	.894
NAR2	25.89	69.345	.481	.277	.907
NAR3	26.00	66.449	.579	.430	.902
NAR5	25.94	64.142	.730	.637	.893
NAR6	25.72	64.894	.702	.609	.894
NAR7	26.24	65.057	.691	.566	.895
NAR9	25.81	64.707	.700	.588	.895
NAR10	25.74	63.811	.737	.624	.892
NAR11	26.60	66.337	.646	.489	.898
NAR12	26.33	65.412	.668	.530	.897

Appendix O: Study 1 Results for Empathy Scale Reliability (*n* = 357)

Reliability Statistics	
Cronbach's Alpha	Items
.957	10

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EMP1	32.75	74.209	.847	.731	.951
EMP2	32.39	74.805	.803	.676	.953
EMP3	32.82	73.230	.789	.656	.953
EMP4	32.86	71.735	.848	.734	.951
EMP5	32.69	73.809	.779	.627	.954
EMP6	32.85	75.129	.752	.597	.955
EMP7	32.53	73.716	.835	.725	.951
EMP8	32.63	74.521	.802	.663	.953
EMP9	32.53	73.643	.881	.792	.950
EMP10	32.81	74.535	.784	.625	.953

Appendix P: Correlation Table Egoistic Dominance and NAR Items (*n* = 357)

	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	N1	N2	N3	N5	N6	N7	N9	N10	N11	N12
EGO1	1																								
EGO2	.68	1																							
EGO3	.66	.63	1																						
EGO4	.69	.58	.74	1																					
EGO5	.72	.64	.73	.69	1																				
EGO6	.70	.54	.70	.65	.75	1																			
EGO7	.69	.56	.67	.65	.73	.79	1																		
EGO8	.68	.62	.64	.69	.67	.75	.74	1																	
EGO9	.65	.61	.65	.61	.64	.71	.71	.77.	1																
EGO10	.66	.56	.58	.67	.61	.65	.64	.72	.61	1															
EGO11	.73	.59	.62	.67	.67	.71	.70	.72	.66	.67	1														
EGO12	.60	.48	.57	.59	.58	.61	.53	.64	.54	.66	.64	1													
EGO13	.64	.64	.68	.64	.63	.66	.60	.71	.63	.62	.67	.66	1												
EGO14	.59	.55	.57	.57	.61	.54	.54	.62	.54	.62	.61	.63	.69	1											
EGO15	.70	.61	.64	.65	.68	.72	.67	.68	.65	.66	.74	.62	.68	.64	1										
NAR1	.53	.50	.57	.60	.56	.52	.51	.58	.50	.53	.52	.54	.56	.56	.54	1									
NAR2	.24	.24	.22	.28	.28	.27	.27	.26	.21	.31	.26	.31	.27	.31	.26	.41	1								
NAR3	.25	.25	.29	.35	.26	.23	.22	.28	.24	.37	.28	.35	.35	.41	.29	.49	.45	1							
NAR5	.36	.36	.41	.42	.42	.38	.38	.40	.36	.46	.39	.48	.41	.43	.40	.59	.38	.56	1						
NAR6	.32	.40	.42	.41	.41	.40	.34	.41	.29	.43	.41	.47	.45	.41	.39	.59	.38	.47	.73	1					
NAR7	.44	.43	.45	.45	.49	.48	.42	.46	.43	.48	.49	.45	.44	.46	.49	.48	.31	.32	.58	.59	1				
NAR9	.36	.35	.33	.39	.38	.34	.29	.36	.28	.42	.36	.41	.36	.44	.34	.47	.37	.43	.53	.50	.62	1			
NAR10	.39	.35	.45	.52	.44	.43	.34	.46	.35	.50	.41	.53	.41	.45	.43	.59	.37	.41	.52	.54	.59	.71	1		
NAR11	.49	.48	.49	.56	.51	.51	.46	.51	.47	.54	.53	.50	.50	.52	.54	.51	.33	.35	.45	.42	.55	.52	.55	1	
NAR12	.59	.53	.59	.63	.58	.55	.52	.57	.56	.63	.60	.56	.57	.55	.61	.56	.29	.43	.48	.43	.55	.50	.58	.62	1

Note: All correlations are significant at $p < .001$

Appendix Q: Correlation Table Egoistic Dominance and Empathy Items (n = 357)

	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	EMP1	EMP2	EMP3	EMP4	EMP5	EMP6	EMP7	EMP8	EMP9	EMP10
EGO1	1																								
EGO2	.68	1																							
EGO3	.66	.63	1																						
EGO4	.69	.58	.74	1																					
EGO5	.72	.64	.73	.69	1																				
EGO6	.70	.54	.70	.65	.75	1																			
EGO7	.69	.56	.67	.65	.73	.79	1																		
EGO8	.68	.62	.64	.69	.67	.75	.74	1																	
EGO9	.65	.61	.65	.61	.64	.71	.71	.77.	1																
EGO10	.66	.56	.58	.67	.61	.65	.64	.72	.61	1															
EGO11	.73	.59	.62	.67	.67	.71	.70	.72	.66	.67	1														
EGO12	.60	.48	.57	.59	.58	.61	.53	.64	.54	.66	.64	1													
EGO13	.64	.64	.68	.64	.63	.66	.60	.71	.63	.62	.67	.66	1												
EGO14	.59	.55	.57	.57	.61	.54	.54	.62	.54	.62	.61	.63	.69	1											
EGO15	.70	.61	.64	.65	.68	.72	.67	.68	.65	.66	.74	.62	.68	.64	1										
EMP1	-.50	-.53	-.67	-.62	-.65	-.56	-.54	-.61	-.48	-.55	-.52	-.53	-.60	-.52	-.54	1									
EMP2	-.59	-.56	-.70	-.66	-.63	-.57	-.61	-.60	-.61	-.57	-.55	-.54	-.59	-.52	-.55	.72	1								
EMP3	-.40	-.49	-.64	-.56	-.55	-.51	-.47	-.50	-.44	-.43	-.41	-.44	-.53	-.44	-.47	.74	.66	1							
EMP4	-.55	-.52	-.66	-.64	-.59	-.50	-.52	-.58	-.51	-.53	-.49	-.54	-.58	-.53	-.49	.74	.71	.73	1						
EMP5	-.48	-.46	-.59	-.56	-.53	-.50	-.51	-.55	-.47	-.52	-.45	-.49	-.50	-.50	-.47	.68	.65	.64	.75	1					
EMP6	-.42	-.45	-.59	-.54	-.51	-.40	-.39	-.46	-.40	-.42	-.40	-.42	-.46	-.45	-.45	.69	.60	.60	.69	.60	1				
EMP7	-.57	-.58	-.70	-.66	-.65	-.59	-.63	-.61	-.61	-.55	-.57	-.53	-.59	-.53	-.60	.76	.74	.65	.71	.67	.69	1			
EMP8	-.45	-.43	-.58	-.57	-.50	-.45	-.48	-.47	-.46	-.42	-.44	-.39	-.49	-.40	-.44	.68	.67	.70	.69	.65	.64	.69	1		
EMP9	-.54	-.53	-.68	-.64	-.65	-.54	-.57	-.60	-.56	-.51	-.55	-.51	-.56	-.52	-.53	.78	.77	.69	.76	.72	.71	.80	.76	1	
EMP10	-.44	-.43	-.61	-.55	-.55	-.49	-.48	-.54	-.41	-.45	-.44	-.48	-.47	-.39	-.42	.69	.64	.67	.69	.64	.60	.68	.69	.73	1

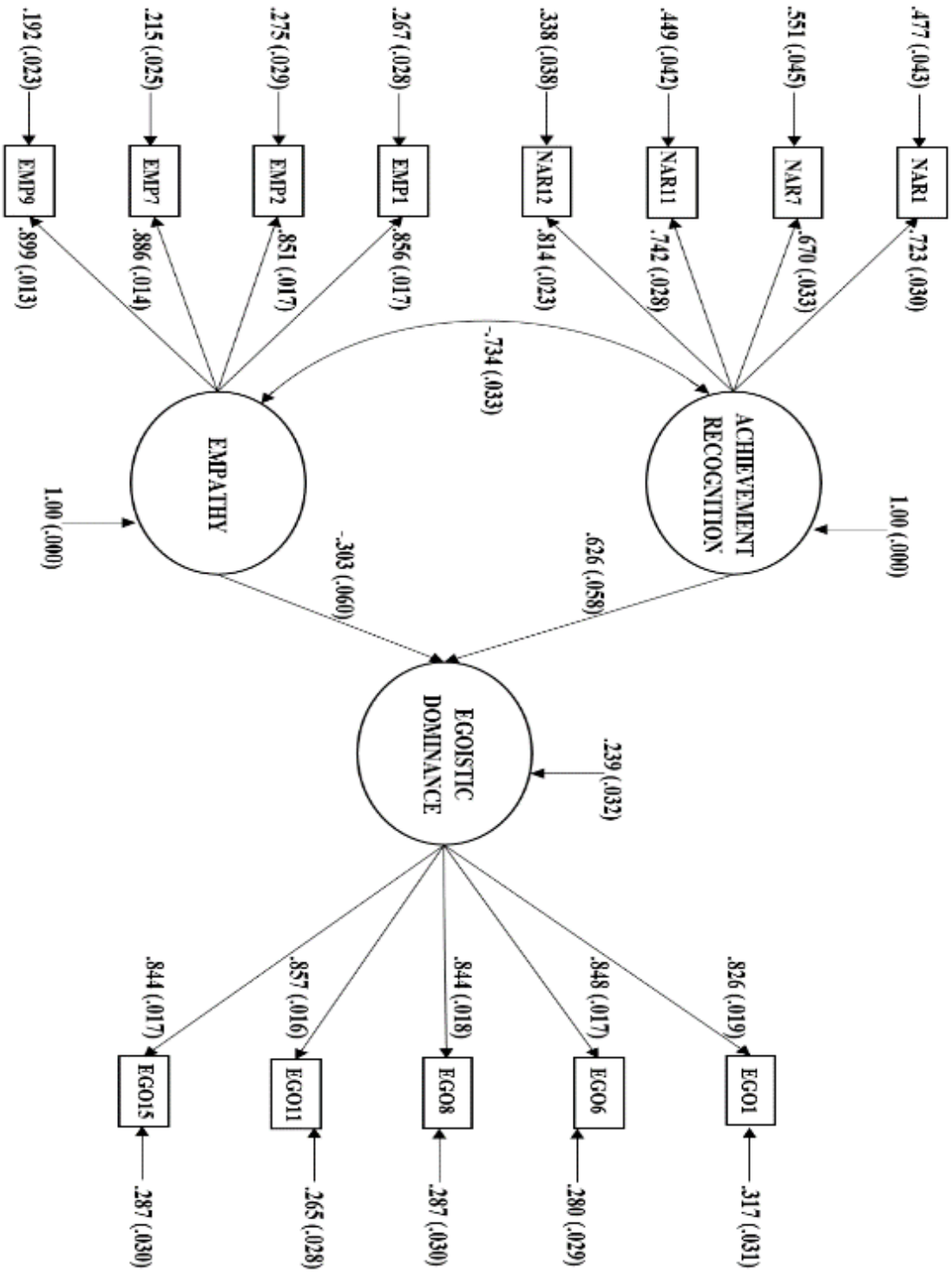
Note: All correlations are significant at $p < .001$

Appendix R: Correlation Table for Shortened Subscales (*n* = 357)

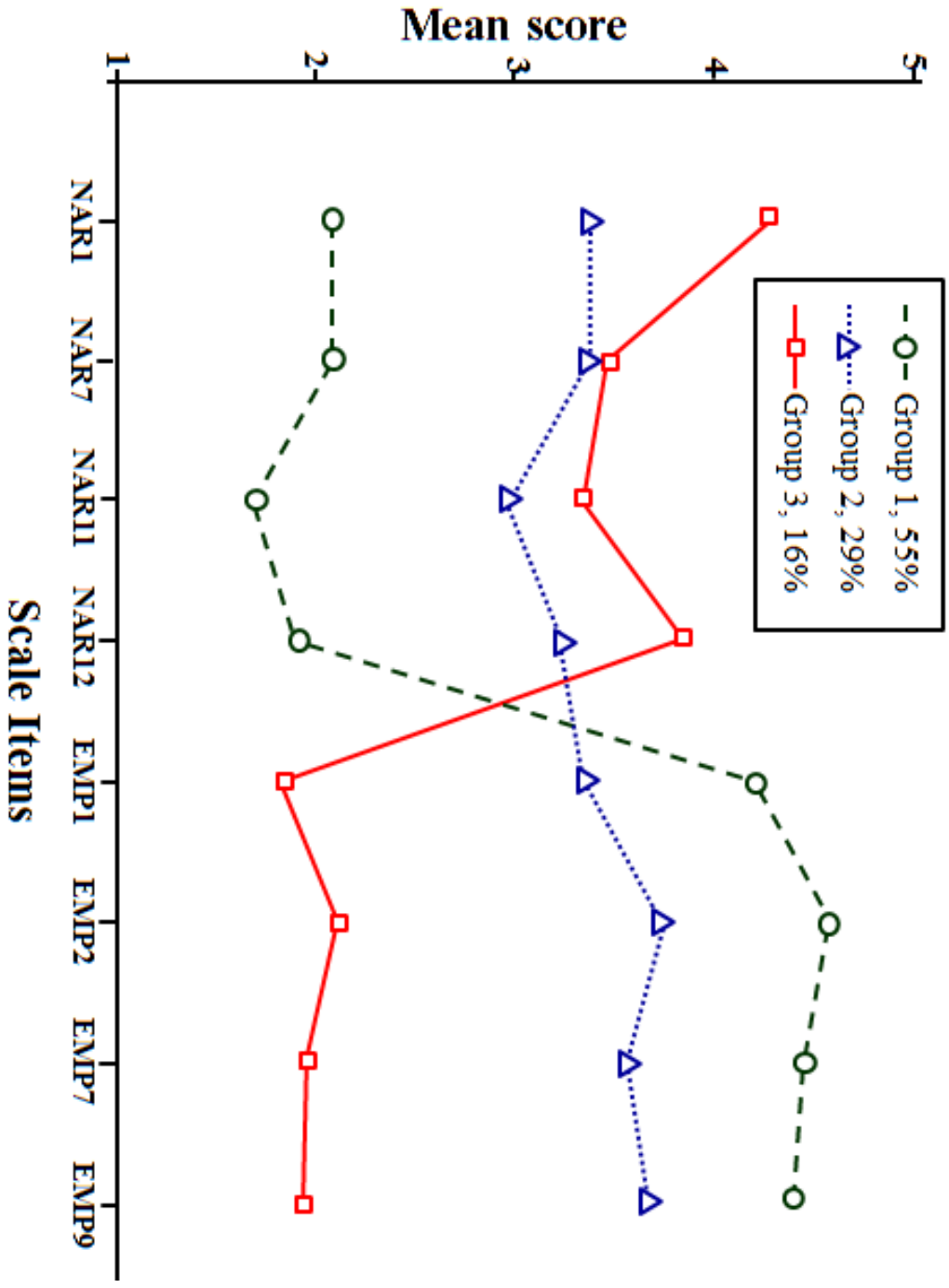
	Mean	SD	EGO	1	6	8	11	15	NAR	1	7	11	12	EMP	1	2	7
EGOSHORT (5 Items)	***9.99***	***5.10***	***(.93)***														
EGO1	2.00	1.20	.87														
EGO6	2.00	1.20	.89	.70													
EGO8	2.09	1.21	.88	.68	.75												
EGO11	1.94	1.14	.89	.73	.71	.72											
EGO15	1.96	1.07	.87	.70	.72	.68	.74										
NARSHORT (4 Items)	***10.44***	***3.94***	***.74***	***.64***	***.64***	***.65***	***.66***	***.67***	***(.83)***								
NAR1	2.81	1.29	.61	.53	.52	.58	.52	.54	.79								
NAR7	2.69	1.20	.54	.44	.48	.46	.49	.49	.79	.48							
NAR11	2.33	1.16	.59	.49	.51	.51	.53	.54	.82	.51	.55						
NAR12	2.60	1.21	.66	.59	.55	.57	.60	.61	.84	.56	.55	.62					
EMPSHORT (4 Items)	***15.07***	***3.90***	***-.71***	***-.61***	***-.62***	***-.67***	***-.60***	***-.61***	***-.64***	***-.59***	***-.40***	***-.50***	***-.59***	***(.93)***			
EMP1	3.56	1.06	-.62	-.50	-.56	-.61	-.52	-.54	-.58	-.55	-.37	-.42	-.53	.90			
EMP2	3.93	1.07	-.65	-.58	-.57	-.60	-.55	-.55	-.58	-.52	-.35	-.47	-.55	.89	.72		
EMP7	3.79	1.11	-.67	-.57	-.59	-.61	-.57	-.60	-.59	-.52	-.37	-.48	-.55	.91	.76	.74	
EMP9	3.79	1.06	-.63	-.54	-.54	-.60	-.55	-.53	-.58	-.56	-.37	-.43	-.50	.92	.78	.77	.80

Note: All correlations are significant at $p < .001$

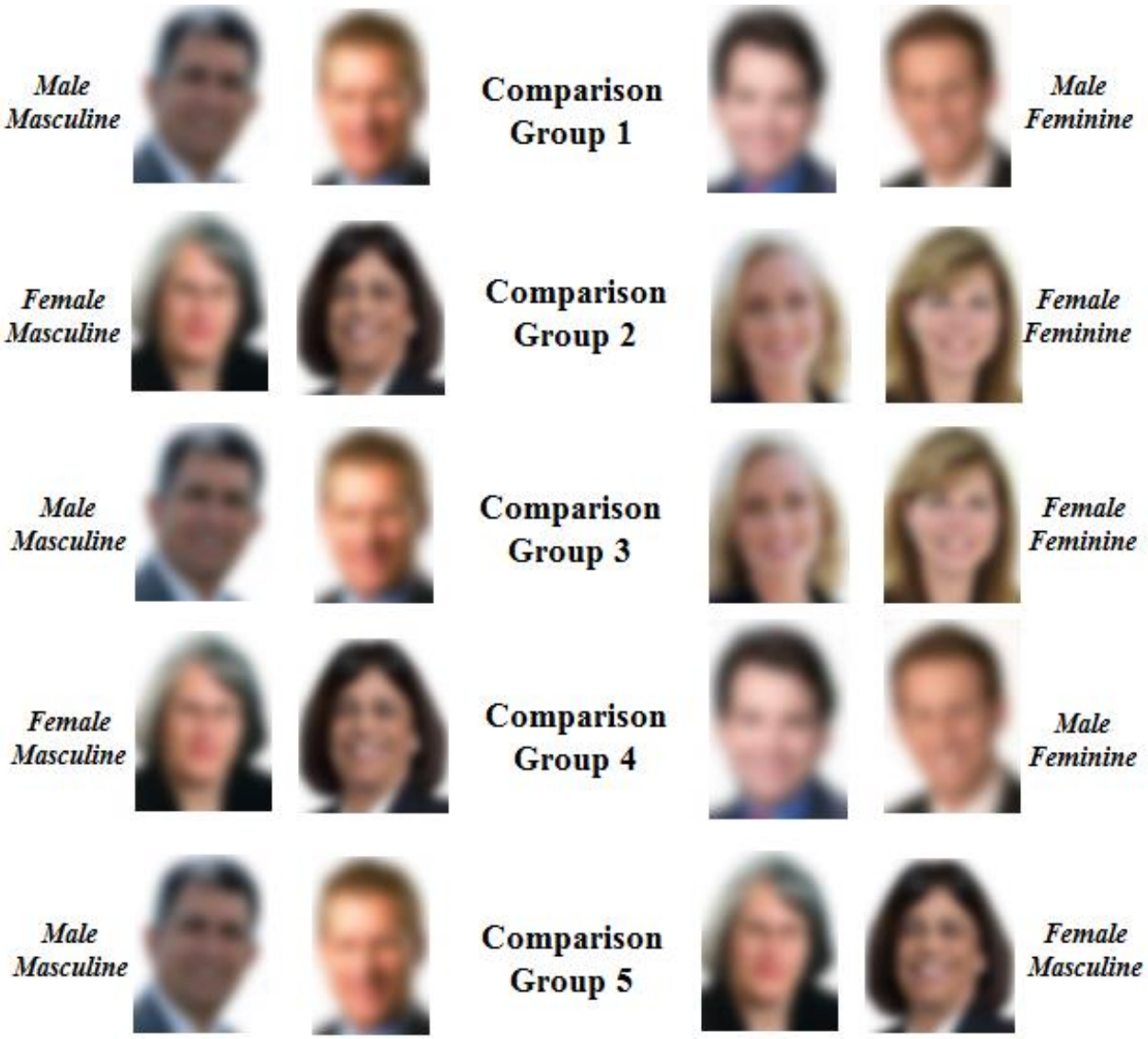
Appendix S: Confirmatory Factor Analysis Three Factor Structural Model (*n* = 357)



Appendix T: Latent Class Analysis – NAR and Empathy Response Patterns

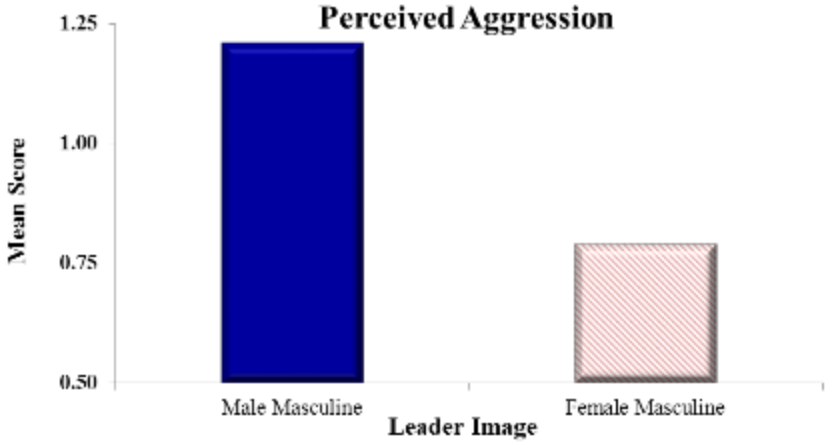


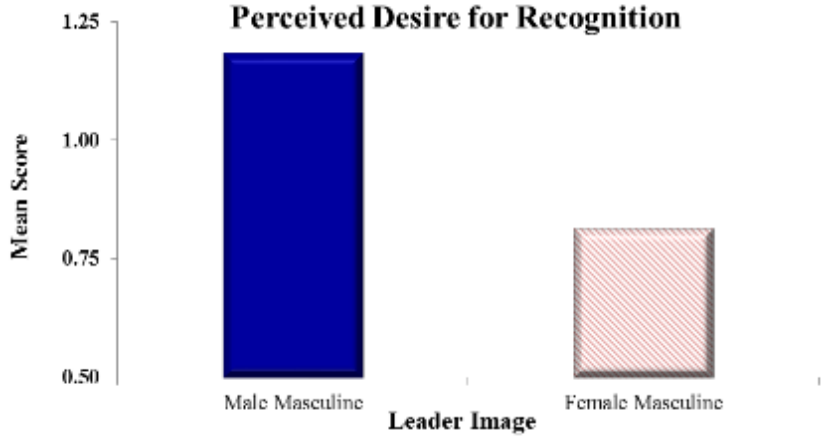
Appendix U: Facial Comparison Groups Presented to Participants

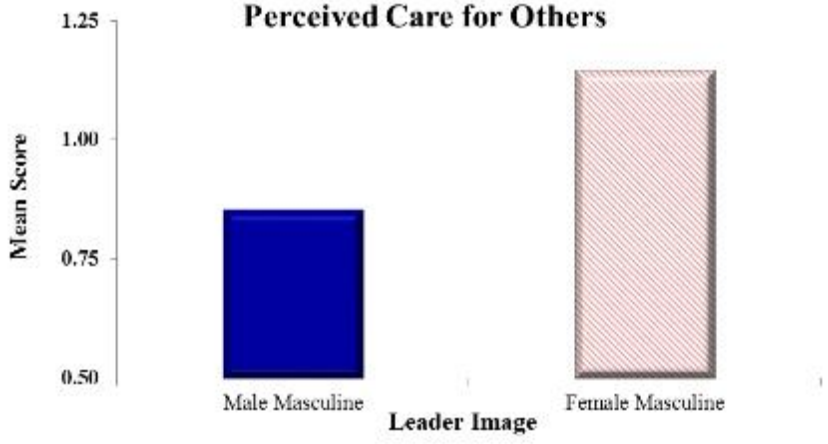


Note: Faces were blurred for publication only; the original, clear-resolution images were used in the study.

Appendix V: Male Masculine vs Female Masculine Perception Comparisons







Appendix W: Institutional Review Boards Exempt Certificate

USF
UNIVERSITY OF SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX(813)974-7091

3/8/2018

Matthew Arbogast
Psychology
4202 E. Fowler Avenue 33620
Tampa, FL 33620

RE: **Exempt Certification**
IRB#: Pro00034360
Title: Egos gone wild: Threat detection and the domains indicative of toxic leadership

Dear Mr. Arbogast:

On 3/8/2018, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is closed in ARC. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board