Psychopathy and Heroism in First Responders: Traits Cut From the Same Cloth?

Article *in* Personality Disorders: Theory, Research, and Treatment · November 2017

DOI: 10.1037/per0000261

CITATIONS
15

READS
1,670

3 authors, including:

Christina L. Patton
Colorado Mental Health Institute - Pueblo
10 PUBLICATIONS **87** CITATIONS
SEE PROFILE

Sarah Francis Smith
Emory University
24 PUBLICATIONS **766** CITATIONS
SEE PROFILE

Personality Disorders: Theory, Research, and Treatment

Psychopathy and Heroism in First Responders: Traits Cut From the Same Cloth?

Christina L. Patton, Sarah Francis Smith, and Scott O. Lilienfeld

Online First Publication, November 9, 2017. http://dx.doi.org/10.1037/per0000261

Personality Disorders: Theory, Research, and Treatment

1949-2715/17/$12.00 http://dx.doi.org/10.1037/per0000261

Psychopathy and Heroism in First Responders: Traits Cut From the Same Cloth?

Christina L. Patton
West Virginia University

Sarah Francis Smith and Scott O. Lilienfeld
Emory University

Some scholars have posited that certain traits associated with psychopathy—namely, fearlessness, boldness, and willingness to take risks—are associated with greater engagement in heroic and altruistic acts; nevertheless, this conjecture has received little empirical attention. We examined the relations among psychopathic traits, heroism, altruism, workplace deviance, and leadership in first-responder (n = 138) and civilian (n = 104) samples recruited by means of an online platform. Across samples, fearless dominance, boldness, sensation seeking, and several other psychopathy-related variables were positively and significantly associated with everyday heroism and altruism. First responders scored significantly higher than did civilians on measures of psychopathy, fearlessness, boldness, heroism, and altruism, and reported significantly greater workplace deviance and participation in leadership activities. Our results support previous suggestions of ties between psychopathic traits, especially fearlessness and heroism, although they leave unresolved the question of why certain antisocial and prosocial behaviors appear to covary.

Keywords: psychopathy, heroism, successful psychopathy, altruism, workplace deviance

Known as one of the America's most charismatic leaders, Andrew Jackson was not only our seventh president but also a military and political dynamo, often referred to as "Old Hickory," owing to his toughness and determination (Cheathem, 2013). In the War of 1812, Jackson led his troops to victory in several crucial battles on U.S. soil and water, including the Battle of New Orleans, where his efforts forced the British to withdraw from the states. With no formal military training, Jackson's eye for strategy and fearlessness under siege set him on course for a U.S. presidency in 1828. Despite his service to his country and countless acts of heroism in the face of danger, he was known for his fiery and explosive temper. As a child, he had a penchant for fighting, cursing, and playing pranks on others. In his late teenage years, he spent all of his grandfather's inheritance in gambling, and when he ran out of money, resigned himself to teaching, which he reportedly disdained (Cheathem, 2013; Klein, 2014). Jackson is thought to have participated in countless barroom brawls and hundreds of duels, at least one of which culminated in his killing a man (Cheathem, 2013; Klein, 2014). One of his earliest biographers referred to him as a "democratic autocrat," "an urbane savage," and "an atrocious saint" (Parton, 1859, p. vii).

Jackson's biographical details are suggestive of a person who is simultaneously fearless and bold, yet at times brash, aggressive, and impulsive—perhaps not unlike those individuals referred to as "psychopaths." Interestingly, Jackson ranked third in a list of 42 U.S. presidents evaluated for their overall level of psychopathic traits (Lilienfeld, Waldman, et al., 2012), as measured by estimated scores on the Psychopathic Personality Inventory–Revised (PPI-R; Lilienfeld & Widows, 2005). Successful psychopaths, who "possess the core traits of psychopathic personality but who achieve marked societal success in one or more domains" (Smith, Watts, & Lilienfeld, 2014, p. 1), presumably differ from more traditionally defined psychopaths in several ways, including less pronounced antisocial behavior (Fowles & Dindo, 2009; Hall & Benning, 2006; Smith & Lilienfeld, 2013), greater intelligence and executive functioning, and more effective parenting (Lilienfeld, Watts, & Smith, 2015). The concept of successful psychopathy suggests that an individual can display many affective and interpersonal features of psychopathy without perpetrating numerous deviant behaviors, and that this combination of features could be associated with largely adaptive outcomes.

Specifically, some have hypothesized that some elements of psychopathy, especially boldness and a willingness to take risks, may be associated with heroic behavior. Indeed, Lykken (1995) conjectured that "the hero and the psychopath may be twigs off the same genetic branch" (p. 29; but see Crego & Widiger, 2015, for an alternative view). Although the literature on the relation between psychopathy and heroism is growing, the challenges in understanding and recruiting individuals with elevations in both domains have led researchers to refer to them as an "elusive" group (Smith et al., 2014).

What Is Psychopathy?

Psychopathy is often conceptualized as a paradoxical constellation of traits capturing a pervasive lack of empathy and remorse,

Christina L. Patton, Department of Psychology, West Virginia University; Sarah Francis Smith and Scott O. Lilienfeld, Department of Psychology, Emory University.

We thank Bill Fremouw, for his helpful guidance and consultation regarding this project.

Correspondence concerning this article should be addressed to Christina L. Patton, Department of Psychology, West Virginia University, P.O. Box 6040, Morgantown, WV 26506. E-mail: clpatton@mix.wvu.edu

conjoined with outward normalcy, poise, and charisma. As described by Cleckley (1941) in his classic book *The Mask of Sanity*, psychopathy encompasses a number of traits, including superficial charm, dishonesty, poor judgment, poverty of emotion, and unmotivated antisocial behavior. Researchers commonly characterize psychopathy in terms of two factors, which are either slightly or moderately correlated depending on the measure used: Factor 1, which encompasses interpersonal/emotional traits, and Factor 2, which encompasses lifestyle/behavioral features (Harpur, Hakstian, & Hare, 1988). Specifically, Factor 1 (sometimes referred to as primary psychopathy) subsumes traits such as superficial charm, grandiose sense of self-worth, blame externalization, and guiltlessness, whereas Factor 2 (sometimes referred to as secondary psychopathy) subsumes antisocial behaviors and traits, such as irresponsibility, impulsivity, and sensation seeking.

More recently, this two-pronged conceptualization of psychopathy has been reconceptualized as a "dual-process model," in which psychopathy is posited to be the result of two joint processes: a bold, fearless temperament marked by generally adaptive functioning on the one hand, and a temperament marked by externalizing behavior and disinhibition typically associated with maladaptive functioning on the other (Fowles & Dindo, 2009; Hall & Benning, 2006). Foreshadowing this idea, Cleckley (1941, 1976) posited that although psychopaths are deeply pathological, they exhibit several traits that may prove beneficial to short-term success, including social poise, charisma, and sangfroid. This view has recently been supported by Crego and Widiger (2016), who found in a survey study that the psychopathic individuals in Cleckley's seminal case histories tended to exhibit high levels of traits presumed to be largely adaptive (e.g., boldness, fearlessness, self-assuredness, and low worry proneness).

Related to this conceptualization is the triarchic model of psychopathy (Patrick, Fowles, & Krueger, 2009), which suggests that psychopathy is an amalgam of three dimensions: boldness (diminished fear reactivity), disinhibition, and meanness (emotional coldness). This approach identifies successful psychopaths largely as those with higher levels of boldness than unsuccessful psychopaths, combined with disinhibition and emotional coldness.

Measures more directly assessing psychopathy also hint of an empirical link between psychopathy and heroic behavior, as well as other positive outcomes. On a commonly used measure of psychopathic personality, the PPI-R (Lilienfeld & Widows, 2005), Fearless Dominance comprises social potency, charm, stress immunity, and physical fearlessness. PPI-R Self-Centered Impulsivity, in contrast, comprises antisocial/behavioral traits, including poor impulse control, self-centeredness, recklessness, and manipulativeness. With regard to the dual-process model, Fearless Dominance may be associated with more adaptive behavior, including heroism, whereas Self-Centered Impulsivity may be associated with more maladaptive outcomes. Indeed, Fearless Dominance is negatively correlated with anxiety, depression, and suicide attempts, whereas Self-Centered Impulsivity is positively associated with these outcomes (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Douglas et al., 2008; Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006). Patrick et al.'s (2009) Triarchic Psychopathy Measure, or TriPM, captures the triarchic constructs of Boldness, Disinhibition, and Meanness. The TriPM Boldness scale is strongly positively associated with PPI-R Fearless Dominance, whereas the Meanness and Disinhibition subscales are associated with PPI-R Coldheartedness and PPI-R Self-Centered Impulsivity, respectively.

Successful Psychopathy

In principle, the same traits that may contribute to frequent interactions with the law (e.g., fearlessness, narcissism, Machiavellianism, sensation seeking, and other psychopathy-related constructs) could also be associated with success in politics, business, extreme sports, and military operations (Babiak & Hare, 2006; Falkenbach & Tsoukalas, 2011; Lilienfeld, Latzman, Watts, Smith, & Dutton, 2014; Lykken, 1995). Nevertheless, individuals are not well represented in the traditional samples of psychopathic individuals serving prison time.

Widom (1977) was among the first to address this problem by soliciting ostensibly psychopathic subjects from the Boston community. Unlike samples of incarcerated psychopaths, Widom's sample was notable for apparently intact executive functioning and impulse control (Lilienfeld et al., 2015). Only a few of her participants, however, were successful in the traditional sense, with occupations such as "business manager" and "investment banker" reported by some.

When it comes to leadership in the workplace, psychopathy is associated with dysfunctional management styles and being a poor team player, but also with superior communication skills, creativity, and strategic thinking (Babiak, Neumann, & Hare, 2010); conscientiousness and extraversion (Mullins-Sweatt, Glover, Derefinko, Miller, & Widiger, 2010); and entrepreneurship and positive employment outcomes (Ahktar, Ahmetoglu, & Chamorro-Premuzic, 2013). Still others contend that high psychopathy scores are associated with interpersonal dominance, persuasiveness, and boldness, all of which may facilitate the acquisition of leadership positions, positions of power, or occupational success (Babiak & Hare, 2006; Lobaczweski, 2007). Some elements of psychopathy (e.g., narcissism, Machiavellianism, and superficial charm) may be particularly relevant to the interpersonal components of leadership, such as self-promotion and persuasiveness, but this association may be a double-edged sword. For example, transformational leadership, which includes the articulation of vision, enthusiasm, and optimism to followers (Bass & Avolio, 1997), is positively associated with boldness but negatively associated with disinhibition and meanness (Neo, Sellbom, Smith, & Lilienfeld, 2016; Smith, Watts, & Lilienfeld, 2013; Westerlaken & Woods, 2013). Psychopathy also appears to be associated with elements of both positive and negative presidential performance. In one study (Lilienfeld, Patrick, et al., 2012), historians' estimates of U.S. presidents' Fearless Dominance were associated with better independently rated presidential performance, leadership, persuasiveness, crisis management, and congressional relations, whereas those of Self-Centered Impulsivity were related to some indicators of negative job performance (including congressional impeachment resolutions), tolerance of unethical behavior, and negative ethical character.

Psychopathy and Heroism

In an effort to corroborate the aforementioned conjecture of Lykken (1995), researchers have examined whether some features of this condition, especially boldness, also predispose to heroic

behavior, conceptualized as altruistic behavior entailing some degree of risk to the performer of the action. Patrick et al. (2006) found that in a sample of 96 prisoners, PPI-R Fearless Dominance was associated with self-reported heroic behaviors (e.g., helping stranded motorists and breaking up fights) as measured by the Action Frequency Inventory (AFI; Lilienfeld, 1998), a self-report measure of everyday heroism. In contrast, PPI-R Self-Centered Impulsivity scores were negatively associated with heroic behaviors. Falkenbach and Tsoukalas (2011) studied a sample of potentially heroic individuals (i.e., law enforcement officers and firefighters) and found that they scored higher than incarcerated offenders on PPI-R Fearless Dominance. The authors relied on occupation as an indicator of heroic behavior; however, the actual frequency of heroic or prosocial acts in their sample is unknown. Smith, Lilienfeld, Coffey, and Dabbs (2013) evaluated the relation between psychopathy and heroic behavior in undergraduate, community, and presidential samples. They found that PPI-R Fearless Dominance was positively correlated with not only self-reported everyday acts of heroism, $r = .29$, $p = .01$, but also altruism toward strangers, $r = .23$, $p < .01$. Antisocial behavior was also positively associated with everyday heroism, $r = .17$, $p < .10$, and stranger altruism, $r = .24$, $p < .05$. Smith et al. (2013) further found that war heroism in the U.S. presidents was associated with historian-rated Fearless Dominance. Fearless Dominance has been found to be associated with occupational choice. In a large community sample, Lilienfeld et al. (2014) found that high scorers on Fearless Dominance were more likely than low scorers to work in high-risk professions, some of which may entail elevated levels of heroic behavior (e.g., law enforcement and firefighting).

Despite promising strides in understanding the nature and expression of successful psychopathy, research on its relation to heroic and altruistic behavior could be improved in several ways. First, many studies have relied on samples with minimal arrest rates or low-level antisocial behavior, or they have focused on individuals who are not incarcerated but are not truly "successful" by most societal metrics (Ishikawa, Raine, Lencz, Bihrle, & Lecasse, 2001; Widom, 1977). This is an important methodological limitation given that psychopaths defined as unsuccessful by virtue of avoiding prison may be fundamentally different than those who are successful by way of behaving heroically. Second, in samples of first responders, no attempt was made to directly evaluate heroic acts, and first-responder status was used as a proxy for heroism (Falkenbach & Tsoukalas, 2011). Moreover, when undergraduate samples have been used, the frequency of many heroic acts was low, perhaps resulting in underestimates of the magnitude of relation between heroism/altruism and psychopathy challenge (Smith et al., 2013). In addition, no studies have recruited community samples to provide basis for comparison with individuals with potential features of successful psychopathy. More broadly, sampling limitations have precluded access to a group of individuals who may more clearly embody the successful psychopathy traits—those who have not only worked in high-risk occupations but also performed heroic acts.

Hypotheses

In an attempt to replicate and extend the results of Smith et al. (2013) using a sample presumably marked by elevated levels of heroism, we examined the relation between psychopathy and heroism in a sample of first responders (i.e., police officer, military member, emergency medical technicians [EMTs], and firefighters) and nonfirst responders. We predicted that some psychopathic traits would be significantly positively associated with frequent acts of everyday heroism ("Small h heroism"), which may better reflect dispositional variables than dramatic, more infrequent acts of heroism ("Big h Heroism"), which may be related to being in the right place at the right time (Farley, 2012; Smith et al., 2013). On the basis of the results of Smith et al. (2013), we predicted that PPI-R Fearless Dominance, TriPM Boldness, sensation seeking, and antisocial behavior would be positively associated with everyday heroism and stranger altruism, which presumably entails greater social or physical risk than does nonstranger risk. Given their ties to lack of affective empathy and feelings of alienation from others, TriPM Disinhibition and Meanness, as well as PPI-R Coldheartedness, were predicted to be negatively associated with heroism and altruism toward strangers. PPI-R Fearless Dominance and TriPM scores were expected to be positively associated with transformational leadership style and participation in leadership activities. In contrast, we expected other psychopathy scores to be negatively associated with transformational leadership, in accordance with the idea that although psychopathic individuals are often found in leadership ranks, their style of leadership often results in psychological distress, maladaptive outcomes for their subordinates, or both (Westerlaken & Woods, 2013). We elected to examine leadership given its conceptual ties to heroism, as many heroic actions require individuals to organize groups in collective efforts to help others in emergency situations. We administered measures of constructs allied to psychopathy (e.g., Machiavellianism, narcissism, sensation seeking, and extraversion) to ascertain the specificity of our findings to psychopathy in exploratory analyses.

Similar to the predictions of others (Falkenbach & Tsoukalas, 2011), we hypothesized that first responders would score significantly higher than nonfirst responders on PPI-R Fearless Dominance and TriPM Boldness, but also higher on measures of everyday heroism and altruism associated with risk to the self (i.e., altruism associated with social and/or physical risk to the individual engaging in the act). We also predicted that first responders would score higher on measures of transformational leadership and show more frequent participation in leadership activities than nonfirst responders, as a reflection of their higher levels of boldness. Finally, we conducted exploratory analyses to evaluate the correlations between heroism and stranger altruism, on the one hand, and time in first-responder service and PPI-R subscale scores, on the other.

Method

Participants

Following institutional board approval, we recruited participants from two samples via Amazon's Mechanical Turk (M-Turk) survey platform: nonfirst responders ($n = 170$) and first responders ($n = 251$). The latter individuals were explicitly recruited by advertising for those currently serving in a position as a police officer, military member, firefighter, or EMT.

First-responder status and occupation was verified by asking participants whether they were a first responder, and then to which

occupation they belonged (e.g., police officer, military member, EMT, or firefighter). Once they reported their occupation, they were presented with six acronyms identified as commonly used within each career field but not well-known outside of this field (e.g., for law enforcement, "LKA" for "last known address"; for firefighters, "FDC" for "fire department connection"). We developed this acronym task to ensure that people who claimed to be first responders were being truthful about their first-responder status. These acronyms were selected by the authors after completing a literature search and consulting with local first responders in each of the occupational categories.[1] To validate the usefulness of the acronyms selected, one undergraduate forensic psychology class ($N = 30$) was given a test of each set of acronyms and were given extra credit for their participation. The average number of acronyms correct per category was 0.48, with the law enforcement acronym identification being the highest at an average of 1.17. Only two of the 35 students could correctly identify more than three of the acronyms for a specific category, and these two reported having a close family member in that occupational category (e.g., father who was a retired police officer). Given these results, we adopted a standard of at least four of the six acronyms correct for inclusion in the first-responder sample. After removing participants who correctly answered fewer than four of the six acronyms correctly ($n = 32$), the sample included 219 first responders and 170 nonfirst responders ($N = 389$).[2]

Participants were given $2.00 as compensation for an average of 43 min ($SD = 28.36$) of work. Those with survey completion times below one standard deviation from the mean (i.e., <14 mins; $n = 130$) were excluded from analyses due to a concern that these participants sped through the survey and did not review questions carefully. This exclusion yielded a final sample of 242 participants.

The final sample included 104 civilians (43%) and 138 first responders (57%). Most participants (89.4%) reported their age as ranging from 25 to 44 years old (with a full sample range of 18–65 years). The sample was primarily male ($n = 123$, 50.8%), Caucasian ($n = 145$, 60.0%), and reported marital status as "married" ($n = 100$, 41.3%) or "living with another" ($n = 67$, 27.7%). Several participants completed vocational or technical training ($n = 24$, 10.0%), some college ($n = 51$, 21.1%), or a bachelor's degree ($n = 95$, 39.2%).

The final first-responder sample consisted of 41 military members (29.7%), 18 police officers (13.0%), 22 firefighters (15.9%), and 57 EMTs (41.3%). Participants currently or previously serving in the military reported their branches of services as Army ($n = 20$, 48.8%), Marines ($n = 3$, 7.3%), Navy ($n = 6$, 14.6%), Air Force ($n = 9$, 22.0%), Coast Guard ($n = 1$, 2.4%), or more than one branch ($n = 2$, 4.9%). Position identifiers (e.g., Military Occupational Specialty, Air Force Specialty Code, and job titles) were infrequently reported, but the participants who supplied them described themselves as working in both support and operational roles. For example, some military members listed their job titles as "military police," "logistics officer," "combat engineer," and "lab specialist," and law enforcement participants described themselves as "programs analyst," "patrol," or "superintendent." Across first responders, participants reported ranks ranging from entry level ("junior EMT" and "squad member") to intermediate ("sergeant" and "driver engineer") to executive/team leader ("captain," "deputy fire chief," and "assistant superintendent of police"). Participants reported that they performed this kind of work for 1–3 years ($n = 50$, 36.2%), 4–7 years ($n = 31$, 22.5%), 8–12 years ($n = 13$, 9.4%), 13–17 years ($n = 4$, 2.9%), or 18 years or more ($n = 6$, 4.3%).

The first-responder sample differed significantly from the civilian sample on gender, $\chi^2(7) = 29.776$, $p < .001$; race, $\chi^2(1) = 23.168$, $p < .001$; marital status, $\chi^2(5) = 12.423$, $p = .022$; and education, $\chi^2(7) = 18.305$, $p = .005$. Specifically, first responders were more likely than civilians to be male, married, have more advanced education, and to identify as White or Asian/Pacific Islander. Given concerns that sample differences could be related to differential expression of psychopathic traits by gender (Sprague, Javdani, Sadeh, Newman, & Verona, 2012), gender was controlled for in subsequent analyses. Controlling for marital status, education, and race yielded little to no substantive difference in the results, so these variables were not controlled for in the final analyses.

Measures

Demographic, work performance, and general personality assessments.

Demographic and first responder questionnaire. Participants first completed a standard demographic measure assessing basic biographical data, including gender, race/ethnicity, education, and marital status. Additional questions inquired about participants' occupation in one of the target first-responder career fields (i.e., law enforcement, military, firefighter, or EMT). This measure also solicited information about department/unit, rank/position, and number of years of service. If participants identified themselves as current or former military members, additional questions were asked about branch of service and Military Occupational Specialty code (Army and Marines), Air Force Specialty Code, Naval Enlisted Classification, or Naval rating/designator.

Employment History Questionnaire. The Employment History Questionnaire is a 15-item self-report measure created by the authors that inquires about current employment status and history of employment. Participants were asked to describe their last three jobs, report whether they had a leadership position, and explain why they left that position (if applicable). They were also asked to indicate whether they had received an award, department, or community recognition of some sort while serving in each position.

Work Performance Questionnaire. The Work Performance Questionnaire is a 32-item self-report measure of work performance problems specific to first-responder populations (Weiss, Vivian, Weiss, Davis, & Rostow, 2013). Items assess problem behaviors at work (e.g., absenteeism, use of force complaints, being the subject of sexual harassment, or racial discrimination claims), and responses are in yes/no format.

Workplace Deviance Scale. The Workplace Deviance Scale is a 19-item self-report measure of behaviors related to organizational and interpersonal misbehavior (Bennett & Robinson, 2000).

[1] For more information on this or a list of the acronyms used in this study, interested readers should contact the corresponding author.

[2] Participant data were also reviewed to ensure none of the first responders also completed the civilian sample survey. Data analysis revealed no repeat participation between samples.

Participants rate the extent to which they have engaged in a number of deviant workplace behaviors in the past year, with responses on a Likert-type scale from 1 = *never* to 7 = *daily.* Confirmatory factor analysis of this measure has revealed two factors, which were used to create subscales: a 12-item subscale of Organizational Deviance (deviant behaviors directly harmful to the organization) and a seven-item scale of Interpersonal Deviance (deviant behaviors directly harmful to other individuals within the organization). These subscales have shown acceptable internal consistency, with Cronbach's αs of .81 for the Organizational Deviance scale and .78 for the Interpersonal Deviance scale (for this study, α = .93 and .93, respectively).

Big Five Inventory. The Big Five Inventory (BFI) is a 44-item inventory that measures the five-factor model dimensions of personality: Openness, Extraversion, Conscientiousness, Neuroticism, and Agreeableness (John & Srivastava, 1999). The 44-item BFI generally displays acceptable reliability, factorial structure, convergent and discriminant validity (Gosling, Rentfrow, & Swann, 2003), and internal consistency. In the current study, Cronbach's αs were as follows: Extraversion, α = .86; Agreeableness, α = .84; Conscientiousness, α = .87; Neuroticism, α = .87; and Openness, α = .81.

Psychopathy personality measures.

Psychopathic Personality Inventory–Revised. This self-report measure of psychopathic personality traits consists of 154 items, most of which are assigned to eight subscales: Blame Externalization, Rebellious Nonconformity, Coldheartedness, Social Influence, Carefree Nonplanfulness, Fearlessness, Machiavellian Egocentricity, and Stress Immunity (Lilienfeld & Widows, 2005). In this study, Cronbach's αs of the PPI-R subscales were high: Blame Externalization, α = .87; Rebellious Nonconformity, α = .84; Coldheartedness, α = .85; Social Influence, α = .87; Carefree Nonplanfulness, α = .89; Fearlessness, α = .89; Machiavellian Egocentricity, α = .86; and Stress Immunity, α = .87. These factor-analytically derived subscales are in turn assigned to one of the two main factors: Fearless Dominance and Self-Centered Impulsivity (Benning et al., 2003). The Coldheartedness subscale does not load highly on either higher order dimension and is routinely treated as a standalone dimension in analyses.

Levenson Self-Report Psychopathy Scale. The Levenson Self-Report Psychopathy (LSRP) Scale is a 26-item self-report measure of psychopathy that provides scores on two subscales: Primary Psychopathy (e.g., lack of guilt and low levels of empathy) and Secondary Psychopathy (e.g., poor impulse control and irritability; Levenson, Kiehl, & Fitzpatrick, 1995). Participants indicate their level of agreement with a series of statements on a scale from 1 = *agree strongly* to 4 = *disagree strongly.* The internal consistencies (Cronbach's αs) of the primary and secondary psychopathy scales in this study were modest (.60 and .61, respectively).

Triarchic Psychopathy Measure. The TriPM is a 58-item self-report measure, arrayed in a 1 (*true*) to 4 (*false*) Likert-type format, designed to assess three key dimensions of psychopathy: Boldness, Disinhibition, and Meanness (Patrick, 2010; Patrick et al., 2009). The Boldness scale (19 items) maps closely onto the PPI-R construct of Fearless Dominance (Patrick, 2010). The Disinhibition (20 items) and Meanness (19 items) scales broadly mirror the PPI-R constructs of Self-Centered Impulsivity and Coldheartedness, respectively. Cronbach's αs for the current study were as follows: Boldness, α = .83; Disinhibition, α = 92; and Meanness, α = .92.

Measures of other personality/psychopathology constructs.

Narcissistic Personality Inventory. The Narcissistic Personality Inventory (NPI) is a 40-item self-report measure of trait narcissism, and includes items assessing self-centeredness, entitlement, and envy (Raskin & Terry, 1988). On each item, participants are presented with two statements and asked to indicate which they most agree with (with one statement representing greater narcissism). Total score may be used as an indicator of overall narcissism, but others have used the seven subscales identified by Raskin and Terry (1988): Authority, Self-Sufficiency, Superiority, Exhibitionism, Exploitativeness, Vanity, and Entitlement. In this study, Cronbach's α of the NPI total score was high (α = .91). Owing to subscale scores evidencing generally low internal consistency, only total NPI score were used to examine narcissism's relation to other constructs and to address the possibility that narcissism may be adaptive in some occupations/situations (Ackerman et al., 2011).

Mach-IV. The Mach-IV is a 20-item measure of agreement with statements adapted slightly from the writings of Nicolo Machiavelli (Christie & Geis, 1970). Some have found significant positive relations between Machiavellianism and leadership traits, including boldness, confidence, and ambition (Cherulnik, Way, Ames, & Hutto, 1981). Machiavellianism is also associated with core psychopathy constructs such as interpersonal aggression, ruthlessness, and impulsivity (Miller, Hyatt, Maples-Keller, Carter, & Lynam, 2016; Ray & Ray, 1982). Participants indicate their level of agreement with each of the 20 statements on a 1–5 Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach's α for the total Mach-IV score in this sample was .78.

Structured Clinical Interview for DSM Disorders-II: Personality Questionnaire, Antisocial Personality Disorder. The Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) Disorders-II: Personality Questionnaire, Antisocial Personality Disorder is a 13-item self-report screening tool used to assess antisocial personality disorder traits using criteria from *DSM-IV* and now *DSM-5* (American Psychiatric Association, 2013; Spitzer, Williams, Gibbon, & First, 1990). It was administered to assess a history of antisocial behaviors. Cronbach's α in this study was .84.

Brief Sensation-Seeking Survey. The Brief Sensation-Seeking Survey (BSSS) is a shortened version of the 40-item Form V of the Sensation Seeking Scale (Hoyle, Stephenson, Palmgreen, Lorch, & Donahew, 2002). The BSSS is an eight-item measure of traits associated with the desire to experience varied and novel experiences, and is based on the four dimensions of sensation seeking of the SSS-V, namely, Experience Seeking, Boredom Susceptibility, Thrill and Adventure Seeking, and Disinhibition. Responses are answered on a 5-point scale, from 1 = *strongly disagree* to 5 = *strongly agree.* In this study, Cronbach's α for the BSSS was high (α = .83).

Heroism and altruism measures.

Action Frequency Inventory. We used the AFI to assess everyday heroic acts by asking participants to describe how many times in their lives they had engaged in a specific heroic behavior (e.g., breaking up a physical fight, pulling over to assist a stranded motorist). Participants indicated the frequency of each behavior using an ordinal scale (0 = *never* to 6 = *five or more times*). This

measure was modified slightly for the first-responder sample to clarify whether the heroic acts were completed while on-duty or off-duty given that the former behaviors may have been performed as expected tasks of their occupation. In this study, Cronbach's α was high (α = .91).

Self-Report Altruism Scale. The Self-Report Altruism Scale is a self-report measure that assesses the frequency of altruistic behaviors (Rushton, Chrisjohn, & Fekken, 1981). Items are answered on a Likert-type scale from 1 = *participant never engages in behavior* to 5 = *participant engages in behavior very often*. The measure contains two subscales: Altruistic Behavior Toward Strangers (e.g., "I have helped push a stranger's car out the snow/mud") and Altruistic Behavior Toward Charities (e.g., "I have given money to a charity"). In Smith et al. (2013) and in this study, the altruism toward others subscale was regarded as a subsidiary indicator of heroic altruism given that performing heroic acts for strangers often entails at least at some degree of elevated physical or social risk. Cronbach's αs for this study were .90 (stranger altruism) and .80 (charity altruism).

Multifactor Leadership Questionnaire–6 (Short Form). The Multifactor Leadership Questionnaire–6 (Short Form) is a self-report measure designed to evaluate three leadership styles: Transformational, Transactional, and Passive (Bass & Avolio, 1992). Individuals marked by a transformational leadership style create positive change for both followers and society through vision and inspiration. In contrast, transactional leadership, or the "managerial" approach, shapes followers' behavior through by rewards and punishments, whereas passive leadership exemplifies an approach of doing nothing until problems become unavoidable, or doing nothing at all (Burns, 1978). Participants rate the extent to which 21 statements describe them, from 0 = *not at all* to 4 = *frequently, if not always.* In this study, Cronbach's αs were as follows: Transformational Leadership, α = .94; Transactional Leadership, α = .83; and Passive Leadership, α = .71.

Leadership Activities Survey. The Leadership Activities Survey is a brief measure of frequency of participation in leadership activities (e.g., running for political office, directing others at work, and active in clubs or other groups; Lilienfeld et al., 2014). In this study, participants reported the number of times they held a leadership position (e.g., boss or head of a company, president of a club or organization, and political position), with answer options ranging from 0 = *never* to 5 = *five or more times*. In this study, Cronbach's α was .89.

Procedure

Data were collected from participants using Amazon's M-Turk, a widely used system allowing secure, rapid, and inexpensive data collection over the Internet. M-Turk samples are more representative of the U.S. population than undergraduate samples and are significantly more diverse than undergraduate samples. Furthermore, M-Turk has generally been shown to meet acceptable psychometric standards, with reliability coefficients equivalent to those calculated with data from a more traditional sample (Buhrmester, Kwang, & Gosling, 2011; Simons & Chabris, 2012). Nonetheless, the use of M-Turk for scientific research has its limitations, and new guidelines suggest that authors evaluate its appropriateness on a case-by-case basis (Cheung, Burns, Sinclair, & Sliter, 2017). Participants completed a series of questionnaires online. Before signing up for the study, participants received a brief description of the study and its requirements, and read an informed consent form. After passing a brief informed consent quiz used to test understanding, they were directed to the survey.

Results

Positive and negative workplace behaviors reported by the first-responder sample are displayed in Table 1. In accordance with predictions, several participants reported both positive workplace behaviors leading to community and workplace recognition as well as negative behaviors tied to disciplinary action. A small propor-

Table 1
Prevalence of Positive and Negative Workplace Behaviors Self-Reported by First Responders

Behavior	Number of first responders reporting (%)
Involved in family difficulty	42 (30.4%)
Had previous knowledge mistakes	34 (24.6%)
Had previous procedural mistakes	26 (18.8%)
Part of an at-fault motor vehicle accident	18 (13.0%)
Had previous conduct mistakes	11 (7.9%)
Demonstrated undesirable off-duty conduct	10 (7.2%)
Misused official vehicles	9 (6.5%)
Discharged weapon in the line of duty	8 (5.7%)
Received citizen complaint of excessive force	8 (5.7%)
Found responsible for damage/destruction to official property	7 (5.1%)
Received written reprimand from/suspended by a superior	7 (5.1%)
Previously arrested for a felony or misdemeanor	7 (5.1%)
Previously accused of racially offensive conduct, behavior, or verbalizations	7 (5.1%)
Other performance problems	7 (5.1%)
Used alcohol or illicit drugs more than/problematically compared to peers	6 (4.3%)
Resigned voluntarily for personal reasons	5 (3.6%)
Demonstrated inappropriate use of a weapon	4 (2.9%)
Engaged in criminal behavior or corruption	4 (2.9%)
Failed to complete the terms of conditional hire	4 (2.9%)
Sued for sustained misconduct	3 (2.6%)
Engaged in insubordination	3 (2.6%)
Evidenced excessive absenteeism	3 (2.6%)
Previously accused of sexually inappropriate behavior/sexual misconduct	2 (1.4%)
Received citizen complaint of unprofessional conduct	2 (1.4%)
Resigned voluntarily for nonpolice work	0 (0.0%)
Resigned voluntarily for other police work	0 (0.0%)
Resigned at the request of the department	0 (0.0%)
Been terminated for cause	0 (0.0%)
Had a conditional offer of employment withdrawn	0 (0.0%)
Failed to comply with departmental regulations	0 (0.0%)
Received an excessive number of citizen complaints	0 (0.0%)
Engaged in neglect of duty	0 (0.0%)

Note. Percentages were calculated using the total number of participants in the first-responder sample (n = 138).

tion of participants reported a history of procedural, knowledge, and conduct mistakes. Others reported being responsible for a motor vehicle accident, damage or destruction of official property, or misuse of an official vehicle. Some indicated that they were reprimanded at work for unprofessional workplace behavior, and others endorsed being the subject of citizen complaints regarding excessive force, sexual harassment, or racially offensive language. Several participants reported having received community recognition for an accomplishment, and several reported earning awards for their service (e.g., field training medal, "Top Gun," physical fitness award, Meritorious Service Medal, citizenship/community service award, EMT of the Month, and Outstanding Airman/Soldier).

Table 2 displays the correlations among psychopathy, heroism, altruism, leadership, and antisocial behavior variables for all participants.[3] The magnitudes of most these associations were small to medium in size. As predicted, AFI everyday heroism was significantly and positively associated with not only PPI-R Fearless Dominance and TriPM Boldness, but also with sensation-seeking and perhaps surprisingly, antisocial behavior. Stranger altruism, which we conceptualized as a subsidiary indicator of everyday heroism, was also significantly positively associated with several psychopathy-related variables, including PPI-R Fearless Dominance, and TriPM Boldness, as well as with sensation-seeking, antisocial behavior, and narcissism. Unexpectedly, charity altruism was also positively related to these variables. Multifactor Leadership Questionnaire–6 (Short Form) transformational leadership was associated with PPI-R Fearless Dominance, TriPM Boldness, and a number of other psychopathy variables. Interestingly, participation in leadership activities was positively linked not only to the aforementioned variables but also to TriPM Meanness and Disinhibition. Interpersonal and organizational workplace deviance was significantly and positively associated with PPI-R Self-Centered Impulsivity and TriPM Meanness and Disinhibition, but was not significantly associated with boldness or fearlessness. With regard to general personality traits, Openness, Conscientiousness, and Extraversion were significantly and positively associated with everyday heroism, stranger altruism, and charity altruism. Agreeableness was significantly correlated with stranger and charity altruism, whereas Neuroticism was negatively associated with heroism and altruism but positively associated with workplace deviance and problem behaviors.[4]

An omnibus multivariate analysis of variance revealed that first responders differed significantly from civilians on a number of variables, Pillai's trace = .35, $F(26, 833) = 16.97$, $p < .001$, $\eta^2 = .35$. Follow-up univariate analyses of variance indicated that first responders scored significantly higher than did civilians on PPI-R Fearless Dominance and PPI-R Self-Centered Impulsivity, with a medium-to-large Cohen's *d* effect size of .64 and a small effect size of .26, respectively. First responders also scored higher than civilians on measures of TriPM Boldness, Meanness, and Disinhibition, with Cohen's *d* ranging from .28 to .46, reflecting small-to-medium effect sizes. First responders scored significantly higher than civilians on LSRP primary and secondary psychopathy, narcissism, Machiavellianism, sensation seeking, and interpersonal workplace deviance, with small-to-medium effect sizes ranging from .35 to .59. First responders reported significantly greater off-duty heroism, stranger altruism, and charity altruism than civilians (effect sizes of .26–.48). Additionally, first responders evidenced higher levels of transactional leadership style than did civilians ($d = .31$). The samples also differed significantly with regard to several BFI personality traits, with first responders reporting greater extraversion and less openness than civilians; these effect sizes were in the small range (.17–.34).

In exploratory analyses, we computed bivariate correlations to evaluate the relation between time in service and psychopathic trait development (i.e., temporal directionality) in the first-responder sample. Spearman's correlations were used given that the "time in service" variable was ordinal (1 = *1–3 years*, 2 = *4–7 years*, 3 = *8–12 years*, 4 = *13–17 years*, and 5 = *18 years or more*). Results revealed a significant negative association between time in service and PPI-R Self-Centered Impulsivity ($r_s = -.11$, $p = .022$), TriPM Meanness ($r_s = -.16$, $p = .001$), and TriPM Disinhibition ($r_s = -.10$, $p = .041$). Time in service was not significantly related to PPI-R Fearless Dominance ($r_s = -.01$, $p = .866$) or PPI-R Coldheartedness ($r_s = -.02$, $p = .621$). TriPM Boldness was significantly positively, albeit modestly, associated with time in service ($r_s = .17$, $p = .001$).

Discussion

Although a handful of authors (Lykken, 1995) have conjectured that certain psychopathic traits, especially fearlessness, are tied to heroism, these speculations have received little research attention (but see Smith et al., 2013). Moreover, no published work has examined this hypothesis in samples of individuals explicitly selected for participation in professions marked by high levels of engagement in heroic behavior. This study was an effort to fill this gap by comparing heroic behaviors among a sample of first responders with those of other civilians.

Drawing on previous preliminary work (Smith et al., 2013) and the conjectures of Lykken (1995), we predicted that psychopathic traits, especially those tied to boldness (e.g., PPI-R Fearless Dominance and TriPM Boldness), would be positively associated with frequent acts of prosocial behavior, especially heroism. We further predicted that traits of disinhibition and meanness, as assessed by TriPM Disinhibition and Meanness, as well as by PPI-R Cold-

[3] Controlling for first responder status via partial correlations revealed no significant changes in the patterns for these associations. Separate tables (Tables A1–A4) for the correlations among these variables by sample (i.e., civilians vs. first responders) are available in the Appendix.

[4] To evaluate whether the overall relations among variables in the first responder versus civilian samples were statistically significant, we conducted a Box's M test of the equality of covariance matrices. The results of this test were significant, Box's M = 539.18, $df = 666$, $p < .001$. Comparing the statistical significance of these correlations by group (i.e., first responder vs. civilian) revealed significant differences in correlational patterns for: charity altruism and PPI-R Fearless Dominance (.424 for first responders, .119 for civilians), everyday heroism and TriPM Boldness (.003 for first responders, .368 for civilians), everyday heroism and PPI-R Fearless Dominance (−.015 for first responders, .277 for civilians), and Machiavellianism and stranger altruism (−.244 for first responders, .038 for civilians). This finding seems to suggest a pattern of TriPM Boldness and PPI-R Fearless Dominance being more strongly associated with heroism in civilian populations. Nevertheless, given that (a) these findings were unpredicted and (b) the large number of comparisons substantially boosts the odds of Type I error, these scattered differences should be interpreted with considerable caution pending replication in other samples.

Table 2
Associations Between Heroism and Psychopathy Study Variables for Full Sample

Measure	AFI[a] (off duty)	SRA (stranger)	SRA (charity)	MLQ (transform)	LAS	Interpersonal workplace deviance	Organizational workplace deviance	WPQ[b]
PPI-R								
I (FD)	.16***	.36***	.32***	.35***	.17***	.04	−.09*	.01
II (SCI)	−.07	−.09**	−.12***	−.31***	.17***	.39***	.40***	.27***
Coldheartedness	−.18***	−.16***	−.19***	−.27***	−.05	.06	.00	−.05
TriPM								
Boldness	.20***	.32***	.27***	.37***	.13***	−.01	−.17***	−.09**
Disinhibition	−.08*	−.09**	−.11**	−.38***	.07*	.42***	.42***	.27***
Meanness	−.03	−.07*	−.09**	−.33***	.10***	.40***	.34***	.21***
ASPD	.10**	.07*	−.05	−.04	−.11**	.16***	.18***	.17***
LSRP								
Primary Psychopathy	.08**	.07*	.16***	−.08*	.03	.27***	.22***	.03
Secondary Psychopathy	.03	.04	.05	−.25***	−.01	.36***	.28***	.15***
Mach-IV	−.08*	−.09**	−.13***	−.30***	.05	.30***	.31***	.17***
NPI total	.07*	.12***	.20***	.21***	.36***	.31***	.24***	.14***
BSSS total	.16***	.26***	.16***	.06	.10***	.13***	.08**	.20***
BFI								
Openness	.16***	.16***	.19***	.46***	.13***	−.18***	−.20***	−.14***
Conscientiousness	.07*	.17***	.27***	.47***	−.02	−.35***	−.42***	−.28***
Extraversion	.15***	.34***	.32***	.32***	.20***	.07*	−.09**	−.04
Agreeableness	.03	.08**	.18***	.37***	−.09**	−.36***	−.33***	−.22***
Neuroticism	−.02	−.20***	−.23***	−.34***	.03	.19***	.26***	.14***

Note. AFI = Action Frequency Inventory; SRA = Self-Report Altruism Scale; MLQ = Multifactor Leadership Questionnaire (total score; transform = transformational leadership style); LAS = Leadership Activities Survey; WPQ = Work Performance Questionnaire; PPI-R = Psychopathic Personality Inventory–Revised; I (FD) = Factor 1 psychopathy (measured by the Fearless Dominance subscale); II (SCI) = Factor 2 psychopathy (measured by the Self-Centered Impulsivity subscale); TriPM = Triarchic Personality Measure; ASPD = Antisocial Personality Disorder Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* Disorders-II personality questionnaire; LSRP = Levenson Self-Report Psychopathy; Mach-IV = 20-item measure of agreement with statements adapted slightly from the writings of Nicolo Machiavelli (Christie & Geis, 1970); NPI = Narcissistic Personality Inventory; BSSS = Brief Sensation-Seeking Survey; BFI = Big Five Inventory. Correlations displayed were obtained via partial correlation after controlling for gender differences.
[a] AFI scores for first responders were calculated from looking at heroic acts completed off-duty only. [b] The WPQ was analyzed only in the first-responder sample, as it applied to duty-specific tasks. Owing to missing data, *N* ranges from 181 to 204, depending on the analysis conducted.
* $p < .05$. ** $p < .01$. *** $p < .001$.

heartedness, would be negatively associated with these behaviors. We also expected first responders to score higher than nonfirst responders on PPI-R Fearless Dominance and TriPM Boldness, but also higher on measures of everyday heroism (even while off duty) and stranger altruism.

As predicted, several features and correlates of psychopathy, including boldness, narcissism, interpersonal workplace deviance, workplace conduct problems, and sensation seeking, were significantly and modestly positively associated with everyday heroism and altruism. Contrary to our predictions, disinhibition and meanness were largely uncorrelated with everyday heroism and altruism, although some of these negative correlations attained significance. Perhaps surprisingly, in the first-responder sample, a history of behavioral problems in the workplace (e.g., being arrested or charged with a felony or misdemeanor, resigning from a position, failure of conditional hire, and undesirable off-duty conduct) was significantly associated with heroism and participation in leadership activities. These findings, like some others (Smith et al., 2013), suggest that antisocial and prosocial behaviors do not necessarily lie on opposite poles of the same dimension. To the contrary, they may at times even be positively associated, especially when prosocial behaviors entail risk. First responders exhibited significantly higher psychopathy scores than civilians but also reported significantly greater off-duty heroism and altruism. As a consequence, our results caution against the practice of subtracting prosocial behaviors from antisocial behaviors when creating summed measures of behavioral deviance (Levenson et al., 1995).

Our findings broadly substantiate past research (Smith et al., 2013), but go beyond it by demonstrating that first responders exhibit higher levels of certain psychopathic traits, such as boldness, than do civilians. In addition, our results corroborate the perhaps unexpected finding that at least some prosocial behaviors, especially those linked to heroism, appear to be cut from some of the same cloth as antisocial behaviors. Nevertheless, our findings should not be construed as implying that psychopaths and heroes are alike in most, let alone all, important respects. As suggested by Crego and Widiger (2015), it is potentially misleading to suggest that first responders are psychopathic. When considering the construct of psychopathy, many readers will understandably infer that one is referring to most or all of the traits, including those relevant to meanness and disinhibition. Additionally, although low empathy and guilt are hallmarks of psychopathy, these features tend to be negatively associated with heroism—a conclusion borne out broadly by our correlational findings, which pointed to a negative association between PPI-R Coldheartedness and everyday heroism (see Table 2). Hence, it is likely that only certain features of psychopathy, such as boldness and perhaps disinhibition, but by no means all features (especially meanness and coldheartedness), are

tied to heroism. Our findings also leave unresolved the controversial question of whether boldness is part-and-parcel of psychopathy or merely an ancillary feature of it (Lilienfeld, Patrick, et al., 2012; Miller & Lynam, 2012).

Furthermore, our findings leave open the question of why heroic and antisocial behaviors appear to be positively correlated. Lykken's (1995) conjectures would presumably imply that this association would be mediated by fearlessness. To evaluate whether the association between Work Performance Questionnaire conduct problems and AFI heroic behavior, $r = .32$, $p = .001$, would disappear or at least diminish substantially in magnitude after controlling for PPI-R Fearless Dominance, in exploratory analyses we computed partial correlations (not reported in the Results section) between these two variables after controlling for Fearless Dominance. Even after controlling for Fearless Dominance, the correlation between conduct problems and heroism remained essentially identical, $r = .32$, $p = .002$. We found similar results after controlling for PPI-R Self-Centered Impulsivity, $r = .31$, $p < .001$, and TriPM Boldness, $r = .33$, $p < .001$. However, the correlation decreased somewhat after controlling for PPI-R Fearlessness, which is arguably the "purest" indicator of fearlessness in our dataset, $r = .26$, $p < .001$. Although intriguing and provisional, this lattermost finding, in conjunction with the other partial correlations, suggest that the association between heroic and antisocial behaviors may not be solely attributable to fearlessness, and indicate that further research on the sources of this puzzling association will be needed.

This study was marked by several strengths. First, it is the first to compare first responders with a civilian group on psychopathy and related traits, and the relatively large sample ($N = 242$) of community individuals drawn from across the United States may facilitate generalization of the results. In addition, we used several indicators of psychopathy (PPI-R, TriPM, and LSRP), allowing us to avoid the mono-operation bias that characterizes a number of other studies in the psychopathy literature (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). Rather than assuming that first responders were inherently heroic by virtue of their occupation, we directly queried participants concerning their participation in everyday heroic behaviors ("small-*h* heroism"), larger scale acts of heroism ("big-*h* Heroism"), and other risky altruistic activities (see Farley, 2012). This methodological feature improves on past research that recruited collegiate and community participants, who presumably had fewer opportunities than the present participants to engage in heroism.

Notwithstanding these strengths, the current study was marked by several limitations that are worth addressing in future work. We relied on self-reports of heroic/altruistic behaviors and did not collect objective measures of such behaviors. We encourage future researchers to collect data on heroic and altruistic behaviors that have been confirmed by reliable informants. In addition, we recruited first responders using Amazon's M-Turk, which generated a first-responder sample of individuals drawn from various locations, occupations, and experiences. This diversity is likely to have introduced unsystematic error arising from differences in how workplace problem behavior and heroic behavior was defined and measured. Despite these limitations, we detected robust associations between these two constructs among first responders. Nevertheless, future researchers should strive to conceptually replicate our findings within relatively homogeneous occupational settings. In addition, we did not evaluate whether heroic/altruistic acts were completed while others were observing these behaviors. In an important study, White (2014) found that LSRP primary psychopathy scores were positively associated with empathic behaviors in the real world, but only when others were watching, raising the possibility that these actions were less altruistic than they appeared. In future research, we recommend that investigators examine whether heroic and altruistic actions were public versus private. Additionally, response biases arising from bragging or a grandiose, inflated self-image among psychopathic individuals may have distorted our results, although meta-analytic data offer only weak support for this possibility (see Ray et al., 2013, for a review). Finally, one limitation of the findings is the absence of adequate data on how the links between psychopathy dimensions and heroism might be mediated by shared general personality dimensions. Although we administered a measure of general personality, our study was underpowered to conduct rigorous tests of mediation. We strongly encourage this approach in future research using larger samples.

Future researchers may wish to improve on the current study in at least two ways. First, researchers should seek to replicate and extend our findings by examining the relations between psychopathy and heroism in a sample of individuals with demonstrated histories of heroism, such as recipients of the "Carnegie Medal for Extraordinary Civilian Heroism," who risked their lives while saving those of others (Carnegie Hero Fund Commission, 2017). Doing so would reduce potential sampling error arising from differences in how heroic behaviors are operationalized and would ensure that the acts of heroism were objectively corroborated. Second, we encourage further investigation of potential mediators, including higher order and lower order personality traits, of the association between psychopathic traits and heroism, as well as between antisocial behaviors and heroism. Such research should eventually shed light on the theoretically and socially important question of why the same individuals who engage in destructive actions in certain situations sometimes engage in constructive actions in others.

References

Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. (2011). What does the narcissistic personality inventory really measure? *Assessment, 18,* 67–87. http://dx.doi.org/10.1177/1073191110382845

Ahktar, R., Ahmetoglu, G., & Chamorro-Premuzic, T. (2013). Greed is good? Assessing the relationship between entrepreneurship and subclinical psychopathy. *Personality and Individual Differences, 54,* 420–425. http://dx:doi.org/10.1016.j.paid.2012.10.013

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. Washington, DC: Author.

Babiak, P., & Hare, R. D. (2006). *Snakes in suits: When psychopaths go to work*. New York, NY: Harper Collins.

Babiak, P., Neumann, C. S., & Hare, R. D. (2010). Corporate psychopathy: Talking the walk. *Behavioral Sciences and the Law, 28,* 174–193. http://dx.doi.org/10.1002/bsl.925

Bass, B. M., & Avolio, B. J. (1992). Developing transformational leadership: 1992 and beyond. *Journal of European Industrial Training, 14,* 21–27.

Bass, B. M., & Avolio, B. J. (1997). *Full range leadership development: Manual for the Multifactor Leadership Questionnaire*. Menlo Park, CA: Mind Garden.

Bennett, R. J., & Robinson, S. L. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology, 85,* 349–360. http://dx.doi.org/10.1037/0021-9010.85.3.349

Benning, S. D., Patrick, C. J., Hicks, B. M., Blonigen, D. M., & Krueger, R. F. (2003). Factor structure of the Psychopathic Personality Inventory: Validity and implications for clinical assessment. *Psychological Assessment, 15,* 340–350. http://dx.doi.org/10.1037/1040-3590.15.3.340

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6,* 3–5. http://dx.doi.org/10.1177/1745691610393980

Burns, J. M. (1978). *Leadership*. New York, NY: Harper & Row.

Carnegie Hero Fund Commission. (2017, March). 21 *Carnegie medals awarded for extraordinary civilian heroism*. Retrieved from http://www.carnegiehero.org/awardees/

Cheathem, M. (2013). *Andrew Jackson, southerner*. Baton Rouge, LA: Louisiana State University Press.

Cherulnik, P. D., Way, J. H., Ames, S., & Hutto, D. B. (1981). Impressions of high and low Machiavellian men. *Journal of Personality, 49,* 388–400. http://dx.doi.org/10.1111/j.1467-6494.1981.tb00221.x

Cheung, J. H., Burns, D. K., Sinclair, R. R., & Sliter, M. (2017). Amazon Mechanical Turk in organizational psychology: An evaluation and practical recommendations. *Journal of Business and Psychology, 32,* 347–361.

Christie, R., & Geis, F. (1970). *Studies in Machiavellianism*. San Diego, CA: Academic Press.

Cleckley, H. (1941). *The mask of sanity*. Oxford, United Kingdom: Mosby.

Cleckley, H. (1976). *The mask of sanity* (5th ed.). St. Louis, MO: Mosby.

Crego, C., & Widiger, T. A. (2015). Psychopathy and the *DSM*. *Journal of Personality, 83,* 665–677. http://dx.doi.org/10.1111/jopy.12115

Crego, C., & Widiger, T. A. (2016). Cleckley's psychopaths: Revisited. *Journal of Abnormal Psychology, 125,* 75–87. http://dx.doi.org/10.1037/abn0000130

Douglas, K. S., Lilienfeld, S. O., Skeem, J. L., Poythress, N. G., Edens, J. F., & Patrick, C. J. (2008). Relation of antisocial and psychopathic traits to suicide-related behavior among offenders. *Law and Human Behavior, 32,* 511–525. http://dx.doi.org/10.1007/s10979-007-9122-8

Falkenbach, D., & Tsoukalas, M. (2011, May). *Can adaptive traits be observed in hero populations?* Poster session presented at the 4th Biennial Meeting of the Society for the Scientific Study of Psychopathy, Montreal, Québec, Canada.

Farley, F. (2012). The real heroes of "The Dark Knight." *Psychology Today*. Retrieved from https://www.psychologytoday.com/blog/the-peoples-professor/201207/the-real-heroes-the-dark-knight

Fowles, D. C., & Dindo, L. (2009). Temperament and psychopathy: A dual-pathway model. *Current Directions in Psychological Science, 18,* 179–183. http://dx.doi.org/10.1111/j.1467-8721.2009.01632.x

Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37,* 504–528. http://dx.doi.org/10.1016/S0092-6566(03)00046-1

Hall, J. R., & Benning, S. D. (2006). The "successful" psychopath: Adaptive and subclinical manifestations of psychopathy in the general population. In C. J. Patrick (Ed.), *Handbook of psychopathy* (pp. 459–478). New York, NY: Guilford Press.

Harpur, T. J., Hakstian, A. R., & Hare, R. D. (1988). Factor structure of the psychopathy checklist. *Journal of Consulting and Clinical Psychology, 56,* 741–747. http://dx.doi.org/10.1037/0022-006X.56.5.741

Hoyle, R. H., Stephenson, M. T., Palmgreen, P., Lorch, E. P., & Donohew, R. L. (2002). Reliability and validity of a brief measure of sensation seeking. *Personality and Individual Differences, 32,* 401–414. http://dx.doi.org/10.1016/S0191-8869(01)00032-0

Ishikawa, S. S., Raine, A., Lencz, T., Bihrle, S., & Lacasse, L. (2001). Autonomic stress reactivity and executive functions in successful and unsuccessful criminal psychopaths from the community. *Journal of Abnormal Psychology, 110,* 423–432. http://dx.doi.org/10.1037/0021-843X.110.3.423

John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York, NY: Guilford Press.

Klein, C. (2014, March). *Ten things you may not know about Andrew Jackson*. Retrieved from http://www.history.com/news/10-things-you-may-not-know-about-andrew-jackson

Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology, 68,* 151–158. http://dx.doi.org/10.1037/0022-3514.68.1.151

Lilienfeld, S. O. (1998). *Fearlessness, antisocial behavior, and heroism*. Unpublished manuscript, Department of Psychology, Emory University, Atlanta, GA.

Lilienfeld, S. O., Latzman, R. D., Watts, A. L., Smith, S. F., & Dutton, K. (2014). Correlates of psychopathic personality traits in everyday life: Results from a large community survey. *Frontiers in Psychology, 5,* 740. http://dx.doi.org/10.3389/fpsyg.2014.00740

Lilienfeld, S. O., Patrick, C. J., Benning, S. D., Berg, J., Sellbom, M., & Edens, J. F. (2012). The role of fearless dominance in psychopathy: Confusions, controversies, and clarifications. *Personality Disorders: Theory, Research, and Treatment, 3,* 327–340. http://dx.doi.org/10.1037/a0026987

Lilienfeld, S. O., Waldman, I. D., Landfield, K., Watts, A. L., Rubenzer, S., & Faschingbauer, T. R. (2012). Fearless dominance and the U.S. presidency: Implications of psychopathic personality traits for successful and unsuccessful political leadership. *Journal of Personality and Social Psychology, 103,* 489–505. http://dx.doi.org/10.1037/a0029392

Lilienfeld, S. O., Watts, A. L., & Smith, S. F. (2015). Successful psychopathy: A scientific status report. *Current Directions in Psychological Science, 24,* 298–303. http://dx.doi.org/10.1177/0963721415580297

Lilienfeld, S. O., & Widows, M. R. (2005). *Professional manual for the Psychopathic Personality Inventory–Revised: (PPI-R)*. Lutz, FL: Psychological Assessment Resources.

Lobaczweski, A. M. (2007). *Political ponerology: A science on the nature of evil adjusted for political purposes*. Grande Prairie, Alberta, Canada: Red Hill Press.

Lykken, D. T. (1995). *The antisocial personalities*. Hillsdale, NJ: Erlbaum.

Miller, J. D., Hyatt, C. S., Maples-Keller, J. L., Carter, N. T., & Lynam, D. R. (2017). Psychopathy and Machiavellianism: A distinction without a difference? *Journal of Personality, 85,* 439–453. http://dx.doi.org/10.1111/jopy.12251

Miller, J. D., & Lynam, D. R. (2012). An examination of the Psychopathic Personality Inventory's nomological network: A meta-analytic review. *Personality Disorders: Theory, Research, and Treatment, 3,* 305–326. http://dx.doi.org/10.1037/a0024567

Mullins-Sweatt, S. N., Glover, N. G., Derefinko, K. J., Miller, J. D., & Widiger, T. A. (2010). The search for the successful psychopath. *Journal of Research in Personality, 44,* 554–558. http://dx.doi.org/10.1016/j.jrp.2010.05.010

Neo, B., Sellbom, M., Smith, S. F., & Lilienfeld, S. O. (2016). Of boldness and badness: Insights into workplace malfeasance from a triarchic psychopathy model perspective. *Journal of Business Ethics*. Advance online publication. http://dx.doi.org/10.1007/s10551-016-3108-8

Parton, J. (1859). *Life of Andrew Jackson*. New York, NY: Mason Brothers.

Patrick, C. J. (2010). *Operationalizing the triarchic conceptualization of psychopathy: Preliminary description of brief scales for assessment of boldness, meanness, and disinhibition* (Unpublished manual). Retrieved from http://phenxtoolkitstage.rti.org/toolkit_content/supplemental_info/psychiatric/measures/Triarchic_Psychopathy_Measure_Manual.pdf

Patrick, C. J., Edens, J. F., Poythress, N. G., Lilienfeld, S. O., & Benning, S. D. (2006). Construct validity of the Psychopathic Personality Inventory two-factor model with offenders. *Psychological Assessment, 18,* 204–208. http://dx.doi.org/10.1037/1040-3590.18.2.204

Patrick, C. J., Fowles, D. C., & Krueger, R. F. (2009). Triarchic conceptualization of psychopathy: Developmental origins of disinhibition, boldness, and meanness. *Development and Psychopathology, 21,* 913–938. http://dx.doi.org/10.1017/S0954579409000492

Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology, 54,* 890–902. http://dx.doi.org/10.1037/0022-3514.54.5.890

Ray, J. V., Hall, J., Rivera-Hudson, N., Poythress, N. G., Lilienfeld, S. O., & Morano, M. (2013). The relation between self-reported psychopathic traits and distorted response styles: A meta-analytic review. *Personality Disorders: Theory, Research, and Treatment, 4,* 1–14. http://dx.doi.org/10.1037/a0026482

Ray, J. J., & Ray, J. A. B. (1982). Some apparent advantages of subclinical psychopathy. *The Journal of Social Psychology, 117,* 135–142. http://dx.doi.org/10.1080/00224545.1982.9713415

Rushton, J. P., Chrisjohn, R. D., & Fekken, G. C. (1981). The altruistic personality and the Self-Report Altruism Scale. *Personality and Individual Differences, 2,* 293–302. http://dx.doi.org/10.1016/0191-8869(81)90084-2

Simons, D. J., & Chabris, C. F. (2012). Common (mis)beliefs about memory: A replication and comparison of telephone and Mechanical Turk survey methods. *PLoS ONE, 7,* e51876. http://dx.doi.org/10.1371/journal.pone.0051876

Skeem, J. L., Polaschek, D. L., Patrick, C. J., & Lilienfeld, S. O. (2011). Psychopathic personality: Bridging the gap between scientific evidence and public policy. *Psychological Science in the Public Interest, 12,* 95–162. http://dx.doi.org/10.1177/1529100611426706

Smith, S. F., & Lilienfeld, S. O. (2013). Psychopathy in the workplace: The knowns and unknowns. *Aggression and Violent Behavior, 18,* 204–218. http://dx.doi.org/10.1016/j.avb.2012.11.007

Smith, S. F., Lilienfeld, S. O., Coffey, K., & Dabbs, J. M. (2013). Are psychopaths and heroes twigs off the same branch? Evidence from college, community, and presidential samples. *Journal of Research in Personality, 47,* 634–646. http://dx.doi.org/10.1016/j.jrp.2013.05.006

Smith, S. F., Watts, A. L., & Lilienfeld, S. O. (2013). *Implications of psychopathy for the workplace: Menace, miracle, or both?* (Unpublished master's thesis). Emory University, Atlanta, GA.

Smith, S. F., Watts, A. L., & Lilienfeld, S. O. (2014). On the trail of the elusive successful psychopath. *The Psychologist, 27,* 506–511.

Spitzer, R. L., Williams, J. B. W., Gibbon, M., & First, M. B. (1990). *Structured Clinician Interview for DSM–III–R Axis II Disorders, (SCID-II)*. Washington, DC: American Psychiatric Press.

Sprague, J., Javdani, S., Sadeh, N., Newman, J. P., & Verona, E. (2012). Borderline personality disorder as a female phenotypic expression of psychopathy? *Personality Disorders: Theory, Research, and Treatment, 3,* 127–139. http://dx.doi.org/10.1037/a0024134

Weiss, P. A., Vivian, J. E., Weiss, W. U., Davis, R. D., & Rostow, C. D. (2013). The MMPI-2 L scale, reporting uncommon virtue, and predicting police performance. *Psychological Services, 10,* 123–130. http://dx.doi.org/10.1037/a0029062

Westerlaken, K. M., & Woods, P. R. (2013). The relationship between psychopathy and the full range leadership model. *Personality and Individual Differences, 54,* 41–46. http://dx.doi.org/10.1016/j.paid.2012.08.026

White, B. A. (2014). Who cares when nobody is watching? Psychopathic traits and empathy in prosocial behaviors. *Personality and Individual Differences, 56,* 116–121. http://dx.doi.org/10.1016/j.paid.2013.08.033

Widom, C. S. (1977). A methodology for studying noninstitutionalized psychopaths. *Journal of Consulting and Clinical Psychology, 45,* 674–683. http://dx.doi.org/10.1037/0022-006X.45.4.674

(*Appendix follows*)

Appendix

Table A1
Associations Between Heroism and Psychopathy Study Variables for Civilians Only

Measure	AFI[a]	SRA (stranger)	SRA (charity)	MLQ (transform)	LAS	Interpersonal workplace deviance	Organizational workplace deviance
PPI-R							
I (FD)	.26**	.28**	.12**	.34**	.10**	.01	−.21**
II (SCI)	−.13**	−.02	−.09	−.19**	.22**	.39**	.36**
Coldheartedness	−.21**	−.03	−.14**	−.21**	.06	.16**	.05
TriPM							
Boldness	.37**	.35**	.20**	−.40**	.15*	.02	−.21**
Disinhibition	−.13**	−.06	−.15**	−.23**	.10*	.38**	.32
Meanness	−.15**	.05	−.08	−.21**	.11*	.40**	.25**
ASPD	.12**	.06	−.17**	−.11**	−.15**	.14**	.15**
LSRP							
Primary Psychopathy	−.04	.04	.14**	.00	−.02	.24**	.19**
Secondary Psychopathy	−.01	.07	.00	−.25**	−.09*	.33**	.24**
Mach-IV	−.09*	.01	−.07	−.19**	.07*	.35**	.33**
NPI total	.13**	.12**	−.09*	.22**	.25**	.25**	.09*
BSSS total	.18**	.17**	−.09*	.03	.03	.11**	.04
BFI							
Openness	.19**	.25**	.24	.47**	.17**	−.20**	−.07
Conscientiousness	.05	.08	.20**	.40**	−.10*	−.33**	−.49**
Extraversion	.23**	.24**	.20**	.34**	.22**	.07	−.18*
Agreeableness	.10*	.03	.09*	.34**	−.16**	−.45**	−.37**
Neuroticism	−.17**	−.19**	−.14**	−.31**	.07	−.30**	.45**

Note. AFI = Action Frequency Inventory; SRA = Self-Report Altruism Scale; MLQ = Multifactor Leadership Questionnaire (total score; transform = transformational leadership style); LAS = Leadership Activities Survey; PPI-R = Psychopathic Personality Inventory–Revised; I (FD) = Factor 1 psychopathy (measured by the Fearless Dominance subscale); II (SCI) = Factor 2 psychopathy (measured by the Self-Centered Impulsivity subscale); TriPM = Triarchic Personality Measure; ASPD = Antisocial Personality Disorder Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* Disorders-II personality questionnaire; LSRP = Levenson Self-Report Psychopathy; Mach-IV = 20-item measure of agreement with statements adapted slightly from the writings of Nicolo Machiavelli (Christie & Geis, 1970); NPI = Narcissistic Personality Inventory; BSSS = Brief Sensation-Seeking Survey; BFI = Big Five Inventory. Correlations displayed were obtained via partial correlation after controlling for gender differences. The Work Performance Questionnaire was analyzed only in the first-responder sample, as it applied to duty-specific tasks—thus, this measure is absent in the current table. Owing to missing data, *N* ranges from 90 to 104, depending on the analysis conducted.
[a] AFI scores for first responders were calculated from looking at heroic acts completed off-duty only.
* $p < .05$. ** $p < .01$.

(*Appendix continues*)

Table A2
Associations Between Heroism and Psychopathy Study Variables for First Responders Only

Measure	AFI[a] (off duty)	SRA (stranger)	SRA (charity)	MLQ (transform)	LAS	Interpersonal workplace deviance	Organizational workplace deviance	WPQ[b]
PPI-R								
I (FD)	−.01	.35**	.39**	.30**	.20**	−.07	−.07	−.04
II (SCI)	−.10*	−.18**	−.22**	−.40**	.17**	.36**	.41**	.26**
Coldheartedness	−.18**	−.23**	−.22**	−.32**	−.12**	−.04	−.04	−.06
TriPM								
Boldness	.02	.28**	.31**	.33**	.04	−.13**	−.18**	−.13*
Disinhibition	−.09*	−.18**	−.17**	−.51**	.07	.41**	.46**	.28**
Meanness	−.08	−.14**	−.18**	−.45**	.12**	.34**	.40**	.24**
ASPD	.16**	.14**	.12**	−.03	.04	.21**	.24**	.20**
LSRP								
Primary Psychopathy	−.03	−.04	.00	−.21**	.02	.20**	.20**	−.03
Secondary Psychopathy	−.03	.01	−.01	−.25**	−.04	.32**	.28**	.09*
Mach-IV	−.09*	−.28**	−.16**	−.37**	.06	.22**	.27**	.14**
NPI total	−.06*	.05	.16**	.11**	.43**	.29**	.30**	.16**
BSSS total	.04	.27**	.12**	.07	.20**	.06	.06**	.17**
BFI								
Openness	.24**	.11**	.23**	.48**	.16**	−.13**	−.14**	−.14**
Conscientiousness	.11*	.25**	.35**	.53**	.07	−.36**	−.38**	−.28**
Extraversion	.03	.41**	.39**	.30**	.13**	−.01	−.09*	−.11**
Agreeableness	.02	.16**	.29**	.41**	−.01	−.31**	−.32**	−.27**
Neuroticism	.11**	−.19**	−.29**	−.36**	.02	.14**	.16**	.15**

Note. AFI = Action Frequency Inventory; SRA = Self-Report Altruism Scale; MLQ = Multifactor Leadership Questionnaire (total score; transform = transformational leadership style); LAS = Leadership Activities Survey; WPQ = Work Performance Questionnaire; PPI-R = Psychopathic Personality Inventory–Revised; I (FD) = Factor 1 psychopathy (measured by the Fearless Dominance subscale); II (SCI) = Factor 2 psychopathy (measured by the Self-Centered Impulsivity subscale); TriPM = Triarchic Personality Measure; ASPD = Antisocial Personality Disorder Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* Disorders-II personality questionnaire; LSRP = Levenson Self-Report Psychopathy; Mach-IV = 20-item measure of agreement with statements adapted slightly from the writings of Nicolo Machiavelli (Christie & Geis, 1970); NPI = Narcissistic Personality Inventory; BSSS = Brief Sensation-Seeking Survey; BFI = Big Five Inventory. Correlations displayed were obtained via partial correlation after controlling for gender differences.

[a] AFI scores for first responders were calculated from looking at heroic acts completed off-duty only. [b] The WPQ was analyzed only in the first-responder sample, as it applied to duty-specific tasks. Owing to missing data, *N* ranges from 95 to 138, depending on the analysis conducted.

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

(*Appendix continues*)

Table A3
Associations Between Psychopathy Measure Subscales and Related Constructs

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. PPI-R ME																	
2. PPI-R C	.37**																
3. PPI-R CN	.54**	.43**															
4. PPI-R BE	.55**	.14**	.47**														
5. PPI-R F	.38**	.26**	.28**	.20**													
6. PPI-R STI	−.27**	.09**	−.27**	−.41**	.36**												
7. PPI-R SOI	.11**	.11**	.05	−.16**	.38**	.57**											
8. PPI-R RN	.56**	.17**	.36**	.44**	.56**	−.04	.08**										
9. TriPM B	−.08*	.17**	−.21**	−.34**	.42**	.74**	.70**	.11**									
10. TriPM D	.63**	.31**	.79**	.52**	.34**	−.28**	−.02	.42**	−.25**								
11. TriPM M	.75**	.55**	.67**	.49**	.48**	−.09**	.15**	.49**	−.03	.79**							
12. LSRP I	.42**	.26**	.16**	.17**	.15**	.02	.09**	.15**	.00	.37**	.43**						
13. LSRP II	.40**	.23**	.39**	.32**	.19**	−.18**	−.02	.27**	−.13**	.54**	.49**	.68**					
14. ASPD	.14**	.03	.03	.04	.24**	.05	.04	.17**	.05	.24**	.17**	.15**	.24**				
15. Mach-IV	.69**	.47**	.52**	.48**	.38**	−.19**	.01	.44**	−.04	.59**	.73**	.37**	.40**	.18**			
16. NPI	.55**	.34**	.24**	.21**	.38**	.15**	.59**	.32**	.35**	.37**	.52**	.32**	.23**	.12**	.34**		
17. BSSS	.28**	.15**	.29**	.23**	.70**	.16**	.25**	.60**	.29**	.31**	.37**	.02	.17**	.17**	.27**	.28**	

Note. PPI-R = Psychopathic Personality Inventory–Revised (subscales: ME = Machiavellian Egocentricity; C = Coldheartedness; CN = Carefree Nonplanfulness; BE = Blame Externalization; F = Fearlessness; STI = Stress Immunity; SOI = Social Influence; RN = Rebellious Nonconformity); TriPM = Triarchic Personality Measure (subscales: B = Bold; D = Disinhibition; M = Meanness); LSRP = Levenson Self-Report Psychopathy (subscales: I = Primary; II = Secondary); ASPD = Antisocial Personality Disorder Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* Disorders-II personality questionnaire; Mach-IV = 20-item measure of agreement with statements adapted slightly from the writings of Nicolo Machiavelli (Christie & Geis, 1970); NPI = Narcissistic Personality Inventory; BSSS = Brief Sensation-Seeking Survey. Owing to missing data, *N* ranges from 154 to 249, depending on the analysis conducted.
* $p < .05$. ** $p < .01$.

(*Appendix continues*)

Table A4

Partial Correlations Between Psychopathy and Heroism-Related Variables After Controlling for First Responder Versus Civilian Status

Measure	AFI[a] (off duty)	SRA (stranger)	SRA (charity)	MLQ (transform)	LAS	Interpersonal workplace deviance	Organizational workplace deviance	WPQ[b]
PPI-R								
I (FD)	.12**	.33***	.26***	.35***	.13***	−.03	−.16***	−.06
II (SCI)	−.13***	−.14***	−.20***	−.31***	.16***	.39***	.39***	.23***
Coldheartedness	−.19***	−.16***	−.19***	−.26***	−.05	.08*	.02	−.08*
TriPM								
Boldness	.16***	.30***	.24***	.37***	.10**	−.06	−.21**	−.14***
Disinhibition	−.15***	−.14***	−.18***	−.38***	.06	.43***	.42***	.22***
Meanness	−.12**	−.13***	−.17***	−.34***	.08*	.37***	.32***	.16***
ASPD	.11**	.07	−.06	−.03	−.08*	.16***	.19***	.12***
LSRP								
Primary Psychopathy	−.03	−.01	.07	−.09**	.00	.28***	.23***	−.04
Secondary Psychopathy	−.05	−.01	−.03	−.26***	−.03	.36***	.26***	.05
Mach-IV[e]	−.16***	−.14***	−.21***	−.30***	.03	.28***	.31***	.11**
NPI total	−.02	.05	.11**	.20***	.35***	.26***	.20***	.07*
BSSS total	.09*	.20***	.09**	.04	.07*	.07	.02	.12***
BFI								
Openness	.17***	.19***	.22**	.47***	.13***	−.20***	−.14***	−.15***
Conscientiousness	.09*	.20***	.28***	.47***	−.02	−.39***	−.49***	−.30***
Extraversion	.12***	.33***	.31***	.33***	.19***	.04	−.14***	−.05
Agreeableness	.04	.17***	.23***	.40***	−.06	−.39***	−.36***	−.20***
Neuroticism	.03	−.23***	−.24***	−.35***	.05	.23***	.32***	.15***

Note. AFI = Action Frequency Inventory; SRA = Self-Report Altruism Scale; MLQ = Multifactor Leadership Questionnaire (total score; transform = transformational leadership style); LAS = Leadership Activities Survey; WPQ = Work Performance Questionnaire; PPI-R = Psychopathic Personality Inventory–Revised; I (FD) = Factor 1 psychopathy (measured by the Fearless Dominance subscale); II (SCI) = Factor 2 psychopathy (measured by the Self-Centered Impulsivity subscale); TriPM = Triarchic Personality Measure; ASPD = Antisocial Personality Disorder Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* Disorders-II personality questionnaire; LSRP = Levenson Self-Report Psychopathy; Mach-IV = 20-item measure of agreement with statements adapted slightly from the writings of Nicolo Machiavelli (Christie & Geis, 1970); NPI = Narcissistic Personality Inventory; BSSS = Brief Sensation-Seeking Survey; BFI = Big Five Inventory. Correlations displayed were obtained via partial correlation after controlling for first-responder status.

[a] AFI scores for first responders were calculated from looking at heroic acts completed off-duty only. [b] The WPQ was analyzed only in the first-responder sample, as it applied to duty-specific tasks. Owing to missing data, *N* ranges from 95 to 204, depending on the analysis conducted.

* $p < .05$. ** $p < .01$. *** $p < .001$.