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Differences in Psychopathy and Associated Traits by Police Officer Rank

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Abstract

Most psychopathy research focuses on its manifestation in forensic populations, however these results may not generalize onto noncriminal, or “successful,” psychopaths. Lykken (1995) conjectured that socialization may enable “heroes,” like law enforcement, to utilize the interpersonal and affective aspects of psychopathy in a manner that benefits society. Previous research (Falkenbach et al., 2018a) suggests that psychopathy and its correlates differ between police recruits and individuals in the community. It is necessary to continue this work with other groups in the police force to see if the patterns found in these studies generalize to veteran officers who have worked in law enforcement for longer periods of time. The objective of the present study was to gain a broader understanding of how police rank relates to personality. Self-report measures were used to see how different traits, such as aggression, behavioral inhibition/activation, empathy, narcissism, affect, and anxiety, related to factors of psychopathy and how they differed between police ranks. Self-report measures were administered to 1459 police officers, including recruits, officers, sergeants, lieutenants, detectives, and executives. The results indicate that the nomological net of Coldheartedness in the current sample is consistent with previous studies (Berg et al., 2015), and that police recruits have higher Self-Centered Impulsivity and lower Fearless Dominance scores than higher ranks. By furthering the research on psychopathy in noncriminal and pro-social populations, a more nuanced depiction of it can be developed. This will help with assessment and treatment of noncriminal psychopathy, and assist departments with better accounting for individual capabilities in job assignments.

Keywords: law enforcement, police, psychopathy, successful psychopathy

Differences in Psychopathy and Associated Traits by Police Officer Rank

Introduction

In the news and popular media, psychopathy is often linked to criminality (Benning, Venables, & Hall, 2018). Despite this common conceptualization, not all criminals are psychopaths, and not all psychopaths are criminals—most psychopathic traits are present to some degree among all people and are not limited to a specific group defined by this pathology. Indeed, it is possible that adaptive aspects of psychopathy could be identified in order to redirect an individual's behaviors from a maladaptive expression, like crime, to a path that could benefit society, such as becoming a law enforcement officer (Lykken, 1995). There is more to be understood about this idea of “successful psychopathy,” such as its prevalence in different populations, how its features and associated characteristics may differ from those found in unsuccessful psychopaths, and when, if ever, those traits are used in a pro-social manner. For answers to these questions, police officers are a diverse group who are tasked with helping society, yet demonstrate some fundamental personality traits found in psychopathy, such as fearlessness (Falkenbach, Balash, Tsoukalas, Stern, & Lilienfeld, 2018). Additionally, further exploration into this personality profile could help professionals who work with police departments to develop both training programs for officers to capitalize on these traits and psychological treatment plans for those who have gone against police procedures.

Overview of Psychopathy

The lay association between psychopathy and criminality is supported by behaviors and personality traits typically attributed to psychopaths, such as a lack of empathy, callousness, self-centeredness, manipulateness, and a lack of, or difficulty with, interpersonal relationships. These interpersonal and affective traits are some of the most common features of psychopathy,

as described in Cleckley's (1941) original conception of the construct in his book *The Mask of Sanity*. Later conceptualizations of the psychopathic personality profile included aspects of social deviance and a propensity towards illegal activity, focusing more on its "antisocial" nature (Hare, 1999). When high levels of the "affective/interpersonal" traits and the "antisocial lifestyle" traits are found in combination, they make up the most common personality profile of a psychopath as outlined by the Psychopathy Checklist-Revised (PCL-R; Hare, 2003). The distinction between these two subsets of traits has resulted in a multiple factor solution to most assessment instruments in which the first factor often relates to the "affective/interpersonal" traits and the second factor relates to the "antisocial lifestyle" traits (Fowles, 2018).

A number of studies have examined traits that are correlated with psychopathy, characteristics that are not explicitly a part of the psychopathy construct or measurements but have been found to either co-occur or rarely occur in conjunction with the factors of psychopathy (an overview of these correlational studies is provided by Fowles, 2018). The affective/interpersonal factor is negatively related to anxiety and behavioral inhibition (Fowles & Dindo, 2006), but positively related to social dominance and overt narcissism (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). The antisocial lifestyle factor is positively related to hostile attributions (Law & Falkenbach, 2018), impulsivity, anxiety, hostile aggression, negative affect, and criminal offending (Skeem et al., 2011).

Although some research has examined psychopathic traits in samples found outside of forensic settings (for an overview see: Benning, Venables, & Hall, 2018), most studies on psychopathy have studied the construct in criminal populations. Conducting research with forensic populations (i.e. unsuccessful psychopaths) provides a distinct and accessible group with known base rates of psychopathy, but as a result the findings of such studies may not

generalize to nonincarcerated individuals and may overemphasize the roles of aggression and antisocial behavior (Falkenbach, 2004). In the general population, psychopathy is less common (Hare, 1996; Coid, Yang, Ulrich, Roberts, & Hare, 2009), making it more difficult to gather samples of individuals who are high in this combination of traits. Therefore, the characteristics of the prototypical psychopath are predominantly derived from research conducted with criminal populations.

Additionally, the most prominent instrument for assessing psychopathy, the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) is only validated for use with forensic populations. Using the PCL-R with community samples is problematic; many of the items in this measure are connected to anti-social and criminal behaviors, or require formal legal records (Hare, 2003). Therefore, the construct of psychopathy may be expressed differently in nonforensic populations, suggesting that the PCL-R definition may not parallel the manifestation of psychopathy in individuals who have never had contact with the legal system. There is a need to know which traits are more prominent in community settings, and which are exclusive to criminal psychopaths in order to further refine and strengthen the understanding of the psychopathy construct (Lilienfeld, Watts, & Smith, 2015).

Successful Psychopathy

The phrase “successful psychopath” has three main conceptualizations (Benning, Venables, & Hall, 2018; Lilienfeld, Watts, & Smith, 2015). As Benning and colleagues (2018) note, these models are not in competition with each other, but are instead viewed as ways to direct research with different populations. The *differential severity model* (Edens, Marcus, Lilienfeld, & Poythress, 2006) is used to refer to subclinical levels, or “incomplete manifestations” of psychopathy, through which individuals engage in less severe actions than the

typical psychopath, with little criminality. Another theory is the *moderated-expression model* (Lykken, 1995), which includes those who have the major traits of psychopathy, but because of a protective external factor, such as a positive upbringing or higher levels of intelligence, they do not partake in illegal activities and live without engaging in crime. Lastly, the *differential-configuration model* (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003) describes individuals who display variation in the traditional psychopathic traits (e.g. higher levels of the interpersonal-affective aspects, and lower levels of the antisocial lifestyle ones) due to etiological differences. In this model, the reduced levels of antisocial traits could enable such a person to achieve success in their life by using the interpersonal-affective traits in a socially-positive, even heroic manner (Lilienfeld et al., 2015).

The earliest research on nonincarcerated psychopaths recruited participants through advertisements; asking for individuals who were charming and impulsive risk-takers (Widom, 1977). Since this created a pool of people already high in psychopathy, it did not allow for inferences to be drawn across a spectrum of levels of psychopathy, and these individuals showed a higher rate of criminal behavior than the overall community. Broader community samples have found that individuals from noncriminal populations with high levels of psychopathic traits display similar levels of aggression, impulsivity, and overall personality profiles to those of incarcerated psychopaths (Crawley & Martin, 2006; DeMatteo, Heilbrun, & Marczyk, 2006; Warren & Clabour, 2009).

As an alternative to the PCL-R, the Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005) provides a means for examining psychopathic traits in nonforensic and community populations. It is composed of eight subscales, seven of which comprise two factors—Fearless Dominance (FD) and Self-Centered Impulsivity

(SCI)—while the eighth, Coldheartedness (CH), is not a part of either factor (Benning et al., 2003). FD parallels the affective/interpersonal factor of the PCL-R, while SCI relates to the antisocial lifestyle factor of the PCL-R. In addition, the factors of the PPI-R do not correlate with each other (Benning et al., 2003). In particular, FD is associated with better life outcomes, including professional success (Howe, Falkenbach, & Massey, 2014) positive affect (Del Gaizo & Falkenbach, 2008), and better moral decision making (Balash & Falkenbach, 2018).

There is research to suggest that the correlates of psychopathy are similar for forensic and community samples, suggesting construct validity across populations (Benning et al., 2003; Falkenbach, Stern, & Creevy, 2014). These include aspects of narcissism, behavioral inhibition/activation, anxiety, aggression, and positive/negative affect (Falkenbach et al., 2014). CH, which is not associated with the two-factor model of the PCL-R, is negatively correlated to anxiety and impulsivity, but more research is needed on the nomological net of this factor (Berg, Hecht, Latzman, & Lilienfeld, 2015).

Additional research on successful iterations of psychopathic traits has also focused on specific groups of people, including CEOs, (Babiak, Neumann, & Hare, 2010) and U.S. presidents (Lilienfeld, Waldman, Landfield, Watts, Rubenzer, & Faschingbauer, 2012). Research on CEOs by Babiak and colleagues (2010) demonstrated a higher degree of psychopathic traits and better communication skills than a community sample. Psychopathy in U.S. presidents was studied through archival data and presidential experts. This study found that FD was linked to ratings of better “presidential performance,” while impulsiveness and antisocial traits were more closely associated with negative performance (Lilienfeld et al., 2012). Both CEOs and presidents are considered highly successful individuals, thereby providing measures of success for noncriminal groups, through which the presence of potentially beneficial psychopathic traits can

be compared to the presence of these traits in community samples. As for “success” that is beneficial to society, as in the differential-configuration model, rather than individual success (as CEOs are), research suggests that examining psychopathic traits in law enforcement officers may offer insight (Falkenbach, McKinley, & Roelofs Larson, 2017a).

Research on Psychopathy in Law Enforcement

Lykken (1995) proposed that “the hero and the psychopath might be twigs on the same genetic branch” (p. 118). He conjectured that socialization enabled heroes, who may have many of the traits of psychopathy (e.g., fearlessness and risk-taking), to utilize the interpersonal and affective aspects of psychopathy in a manner that would be beneficial to others, rather than harmful to them. Many people are considered heroes, but no single group is as synonymous with the word “hero” as members of law enforcement and other first responders. The combination of the benefits they bring to the community and the large amount of power they are perceived to have makes them an intriguing subject pool for psychopathy research.

Most research on the personality and behaviors of law enforcement does not directly mention psychopathic traits. Rather, they measure the correlates of psychopathy, traits that often go hand-in-hand with those that define a psychopathic personality. Studies of law enforcement have found evidence of increased fearlessness (Bannish & Ruiz, 2003), narcissism (Lorinkas & Kulis, 1986), emotional resilience (Kop & Euwema, 2001; Bakker & Heuven, 2006), and excitement-seeking (Goma-i-Freixanet & Wismeijer, 2002), compared to non-law enforcement individuals. These traits are thought to be beneficial to those who work in law enforcement and related fields by allowing for a greater immunity to stressful situations (Falkenbach et al., 2018a).

In spite of their heroic image, recent accounts of police brutality have brought the darker

side of law enforcement to public attention, and as such there is an increased call for research into the personalities and behaviors of police officers (Donnella, 2016). It is important to note that although these incidents are severe and sometimes lethal, they are also rare and often the result of complex circumstances (Goff, Lloyd, Geller, Raphael, & Glaser, 2017). Using the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF; Tellegen & Ben-Porath, 2008), one study observed that it may benefit police departments to screen law enforcement candidates for high impulsivity and inappropriate aggression to reduce such violence (Koepfler, Brewster, Stoloff, & Saville, 2012). This study looked indirectly at the unsuccessful, that is maladaptive, side of psychopathy in law enforcement, rather than the successful aspects. Still, the gravity of these actions underscores the importance of identifying the beneficial features of psychopathic traits in police officers as opposed to focusing on the negative and unsuccessful aspects of psychopathy. Looking at the construct heterogeneously allows researchers to examine both sides of this personality profile.

While the studies of law enforcement personality traits have identified salient aspects of police personality, they do not distinguish between the quality of police work. Henson, Reynolds, Klahm, and Frank (2010) noted that it is difficult to find a suitable indicator of good-quality policing. They considered counts of arrests and citations as ways to measure productivity, and supervisor evaluations as a measurement of performance, but cautioned that these can be biased and do not capture the full scope of police work. This study focused on police recruits, but did not detail their progression through officer ranks. Later research by Schafer and Varano (2017) theorized that potential leaders in police organizations may be identified by a benevolent desire to address problems in either the community or department. Although these studies focused on police success, they did not take the personality of law enforcement officers into account.

An initial study by Falkenbach, McKinley, and Roelofs Larson (2017a) identified two case studies of police officers that each exemplified a branch of the “twig” theorized by Lykken (1995) based upon their divergent PPI-R scores. The first case was categorized as having a “successful” manifestation of psychopathic traits; he scored in the 99th percentile for FD and CH but scored in the 6th percentile for SCI. He ranks as a lieutenant and does not have any disciplinary infractions. The second case, on the other hand, displayed more a maladaptive constellation of traits, similar to the research by Koepfler and colleagues (2012). He had been penalized while working as a police officer and had never been promoted. While the scores for FD and CH were similarly high to those of the first case study (in the 93rd percentile and 98th percentile respectively), the SCI score was in the 96th percentile. The authors note that this high degree of SCI may reduce the benefits of high FD scores. Both of these individuals exemplify how psychopathic traits may appear in a prosocial environment and lead to different degrees of success depending on the combination of traits present.

Expanding upon these case studies, research by Falkenbach, Balash, Tsoukalas, Stern, and Lilienfeld (2018a) provided the first examination of the full spectrum of psychopathic traits in police. This study examined male police recruits, rather than experienced officers, and compared their scores on the PPI-R to a student sample, as well as those of community and incarcerated samples provided by the PPI-R manual (Lilienfeld & Widows, 2005) which were matched to the recruit sample by demographics. The authors observed that the recruits in this study did not display the full range of psychopathic traits, including ones considered more maladaptive, like SCI, but that the recruits did show significantly higher levels of potentially beneficial psychopathic traits such as FD and CH than student, community, and offender samples. This, the authors reasoned, may be because the hiring process of police officers weeds

out those who would be a risk to the safety of others. The study had interesting implications for psychopathy as a dimensional, rather than taxonomic construct, and found support for the concept of heroic traits as another reflection of those classically associated with psychopathy. The authors also noted that because this research only focused on recruits, the results may not generalize onto police officers as a whole.

Extending the work of Falkenbach and colleagues (2018a), subsequent research sought to identify subtypes of psychopathy within a sample of police officers who scored in the top 33rd percentile of the PPI-R (Falkenbach, Glackin, & McKinley, 2018b). Using model-based cluster analysis, this study found two distinct groups within the high-scoring officers. The first group had higher scores for FD, while the second had higher scores for SCI, keeping with findings from previous studies on psychopathic subtypes (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). These subtypes reflect the differences seen in the cases studies of Falkenbach et al. (2017a). Contrary to study expectations, there was also a negative correlation between FD and SCI in the high psychopathy subset, and the SCI scores were lower than the norm. This study also examined a number of correlated traits, including aggression, narcissism, affect, and anxiety, and found that the scores for these were consistent with expectations from the literature. Although not the primary focus, the authors noted differences in officer rank indicating the need for further research.

Although Falkenbach and colleagues (2018a, 2018b) examined differences between police recruits and other samples on psychopathy, the study did not examine differences *within* a police department. Building off of Lykken's "twig" hypothesis (1995), officer rank may provide a means to explore the effects police socialization on personality. For instance, Oberfield (2012) found that socialization through training and organizational culture affected officer attitudes,

particularly those related to the use of force, and that changes continued to take place over a two-year span. Additionally, Perrott and Taylor (1995) found differences in authoritarianism and job satisfaction between constables and supervisors in a sample of Canadian officers. The authors suggest that the supervisors may have either started off their careers with different traits than the constables or been affected by their experiences over the course of their careers. Subsequent research by Hogan, Bennell, and Taylor (2011) identified important traits of police managers including maturity, good communication skills, and the ability to motivate others. They also note that managers must be able to detach themselves from emotional situations. Taken together, these studies indicate that police officer personality either changes to adapt to the needs of different roles with the help of departmental influences or differs between those who choose to go on to higher ranks.

Research is needed to evaluate how difference across police ranks may relate to successful psychopathy and the correlates of psychopathy that are found within its nomological network of traits. Further investigation into this relationship could offer insight into possible factors protect from the development of criminal psychopathy and elucidate the etiology of successful psychopathy. The present study aims to further explore the relationship between officer rank and psychopathy correlates such as aggression, behavioral inhibition/activation, empathy, narcissism, affect, and anxiety, as a means of identifying successful psychopathy in a law enforcement context.

Study Overview

Given the findings from the prior research on psychopathy in law enforcement from Falkenbach and colleagues (2017a, 2018a, 2018b), it is necessary to expand upon this work to see not only how psychopathic traits vary across rank, but also how the correlates of psychopathy

vary across rank. This expansion of these studies will provide insight into in the manifestation of psychopathy in “successful” populations and how personality may differ with rank. The present study aims to do this by measuring the correlates of psychopathic traits in police officers and comparing the scores of each rank. Because police recruits are very new to their job, the objective of this study is to gain a broader understanding of how psychopathy and its correlates may differ throughout police ranks. As Falkenbach et al. (2018a) established in their study, the aim here is *not* to indict police officers as psychopaths, but rather to examine how psychopathic traits manifest and what the effects of these traits are in a setting that is traditionally considered socially-positive.

The goal of this study is to bring further clarity to the presence of these traits throughout the police force, and to identify other aspects of individual personality that have a demonstrated association with psychopathic traits, including narcissism, behavioral inhibition/activation, anxiety, aggression, empathy, and positive/negative affect, by using the respective self-report measures. The hypotheses are as follows:

Hypothesis 1: In terms of the construct validity for the factors of the PPI-R when used in a law enforcement context, it is hypothesized that the nomological nets of FD and SCI for the current sample will be consistent with those discussed in previous research on “successful” populations (Babiak, Neumann, & Hare, 2010; Lilienfeld et al., 2012; Falkenbach, Stern, & Creevy, 2014). As CH is often omitted from psychopathy research (Berg et al., 2015), this study also seeks to determine which correlates of CH are distinct from FD and SCI.

Hypothesis 2: Levels of FD and its correlates (such as high positive affect and low behavioral inhibition) will be comparable throughout ranks even when age and time spent working as a police officer are taken into account. This is because those who have obtained

officer status need to be able to take charge in high-stress situations to perform their jobs effectively, as noted in Falkenbach and colleagues (2018a), rather than promoted being determined as a function of seniority.

Hypothesis 3: Higher ranking police officers in this sample will have lower levels of SCI, and its associated correlates (such as high aggression and low positive affect) than the recruits, and that officer age and time on the police force will not have an impact on these differences. Lower ranking officers have not experienced the same degree of socialization as those in higher ranks (Oberfield, 2012), and so they may still exhibit more “maladaptive” traits.

Hypothesis 4: Higher-ranking officers will have greater levels of CH than those in lower ranks. Police officers often witness events that generate a strong emotional reaction from people, but individuals who have higher levels of this subscale would be less affected by them which allows them to detach themselves from the situation in order to perform their police duties more readily (Hogan et al., 2011).

On an organizational level, identifying the salient psychopathic traits and correlates would help police departments with both recruitment and promotional efforts, and aid in determining who will be most successful in which roles of the police force. Additionally, a greater knowledge of the role that these traits play in law enforcement officers would help the mental health professionals who work with them to develop better plans for individual treatment in terms of stress-related difficulties, and fitness for duty after job misconduct.

Methods

Research Design

This study combined a cross-sectional research design with construct validation to determine whether psychopathic traits and their correlates varied across ranks of police officers.

Archival data from self-report measures were used to see how different traits including aggression, behavioral inhibition/activation, empathy, narcissism, affect, and anxiety correlated with factors of psychopathy.

Participants

The sample initially consisted of 1459 police officers. Nine participants were excluded from analysis for missing data on the PPI-R (including one participant who scored a 48.1 on the PPI-R), and an additional 47 participants were removed for scoring 17 or higher on the PPI-R Inconsistent Responding scale (Lilienfeld & Widows, 2005), bringing the total sample size to 1403.

The ages of the participants ranged from 21 to 59, with an average age of 29.79 ($SD = 6.33$), and a median of 29 (37 missing age). The gender of the participants comprised 85.7% (1202) males and 13.5% (190) females, with 0.8% (11) not specifying either. The racial/ethnic breakdown was 58.8% (825) White/European-American, 20.5% (288) Hispanic/Latinx, 11.4% (160) Black/African-American, 6.3% (88) Asian/Pacific Islander, 0.1% (1) American Indian/Alaska Native, 1.4% (19) “other”, and 1.6% (22) did not specify their race. In terms of their rank as a police officer, 57% (800) were recruits, 6.8% (95) were full officers, 28.2% (396) were sergeants, 4.8% (67) were lieutenants, 2.2% (31) were detectives, and 1% (14) were “executives” which combined the ranks above captain, including investigators. Month spent working on the police force ranged from 0 to 396, with a mean of 55.24 ($SD = 68.07$), and a median of 5 months (50 did not report how long they were a member of the police force). Table 1 contains demographic information for the current sample broken down by police rank.

Measures

All instruments used in this study are self-report questionnaires validated for use on

nonclinical samples, making them suitable for use with law enforcement.

Psychopathic Personality Inventory-Revised (PPI-R; Lilienfeld & Andrews, 1996; Lilienfeld & Widows, 2005). The PPI-R is a 154-item measure designed to assess psychopathic qualities in an individual. Participants are instructed to rate how accurate a statement is of their personality on a four-point Likert scale, ranging from very false (1) to very true (4) (e.g. “I often make the same errors in judgement over and over again.”). The PPI-R is composed of 8 subscales—Machiavellian Egocentricity, Social Potency, Carefree Nonplanfulness, Fearlessness, Blame Externalization, Impulsive Nonconformity, Stress Immunity, and Coldheartedness. Table 2 contains a description of each of these subscales.

Factor analysis has found that seven of these subscales comprise two factors, known as Fearless Dominance (FD: Social Potency, Fearlessness, Stress Immunity) and Self-Centered Impulsivity (SCI: Machiavellian Egocentricity, Carefree Nonplanfulness, Blame Externalization, Impulsive Nonconformity), while the eighth, Coldheartedness (CH), did not enter into either factor (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). FD often entails a lack of empathy and deficits in relationships with others, SCI is associated with impulsivity and other antisocial behaviors, and CH is related to a lack of sentimentality and empathy. In Benning and colleagues (2003), Cronbach’s alphas were .89, for PPI-R total and ranged from .75 to .89 for the subscales. In the current sample, Cronbach’s alpha was .85 for the total PPI-R score, .87 for FD, .91 for SCI, and .74 for CH.

Aggression Questionnaire (AQ; Buss & Warren, 2000). The AQ is a 34-item measure designed to assess the level of aggression in an individual. Participants are instructed to rate how applicable a statement is to them on a five-point Likert scale, ranging from extremely uncharacteristic (1) to extremely characteristic (5) (e.g. “If somebody hits me, I hit back.”). The

AQ is composed of 5 factors: Physical Aggression, Verbal Aggression, Anger, Hostility, and Indirect Aggression. In Buss and Warren (2000), Cronbach's alpha was .89, for AQ total. In the current sample, Cronbach's alpha was .92 for the total AQ score.

Behavioral Inhibition System/Behavioral Activation System (BIS/BAS; Carver & White, 1994). The BIS/BAS is a 24-item measure designed to assess the sensitivity of one's motivational systems to rewards, anxiety, fear, and punishment. Participants are instructed to rate how accurate a statement is of their behavior on a four-point Likert scale, ranging from strong agreement (1) to strong disagreement (4) (e.g. "I worry about making mistakes."). The BIS/BAS is composed of 4 factors: BIS, BAS Reward Responsiveness, BAS Drive, and BAS Fun Seeking. In Carver and White (1994), Cronbach's alpha was .74 for the BIS and ranged from .66 to .76 for the BAS subscales. In the current sample, Cronbach's alpha was .78 for the total BIS/BAS score, .73 for BIS total, and .84 for BAS total.

Interpersonal Reactivity Index (IRI; Davis, 1983). The IRI is a 28-item measure designed to assess empathy. Participants are instructed to rate how applicable a statement is to their personality on a five-point Likert scale, ranging from "Does not describe me" (A) to "Describes me very well" (E) (e.g. "I sometimes try to understand my friends better by imagining how things look from their perspective."). The IRI is composed of 4 subscales: Perspective Taking, Empathic Concern, Personal Distress, and Fantasy. In Davis (1983), Cronbach's alphas ranged from .71 to .77 for the IRI subscales. In the current sample, Cronbach's alpha was .74 for the total IRI score.

Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988). The NPI is a 40-item measure designed to assess levels of narcissistic personality traits. Participants are instructed to choose which of two options they most agree with for each item (e.g. "I am more capable than

other people.”). The NPI is composed of 7 factors: Authority, Exhibitionism, Superiority, Self-Sufficiency, Vanity, Entitlement, and Exploitativeness. Factor analysis has found that these comprise two subscales, overt narcissism (NPI-O; Authority, Exhibitionism, Superiority, Self-Sufficiency) and covert narcissism (NPI-C; Entitlement, Exploitativeness). In Raskin and Terry (1994), Cronbach’s alpha ranged from .50 to .83. In the current sample, Cronbach’s alpha was .82 for the total NPI score.

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988).

The PANAS is a 20-item measure designed to assess affect. Participants are instructed to rate how well a given adjective describes them during a given period of time on a five-point Likert scale ranging from slightly (1) to extremely (5) (e.g. “Jittery,” “Determined.”). The PANAS is composed of 2 dimensions: Positive Affect (e.g. enthusiasm, energy) and Negative Affect (e.g. distress, disgust). In Watson and colleagues (1988), Cronbach’s alpha ranged from .86 to .90 for the Positive Affect scale and from .84 to .87 for the Negative Affect scale. In the current sample, Cronbach’s alpha was .87 for Positive Affect and .87 for Negative Affect.

State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). The STAI is a 20-item measure designed to assess feelings of anxiety and their stability over time. For each item, participants are instructed to rate the intensity of these feelings on a four-point Likert scale, ranging from “Not at all” (1) to “Very much so” (4), and the frequency of these feelings on a four-point Likert scale, ranging from never (1) to always (4) (e.g. “I feel at ease,” “I lack self-confidence.”). The intensity items comprise the State subscale, and the frequency items comprise the Trait subscale. In Spielberger and Reheiser (2009), Cronbach’s alpha had a median of .93 for the State subscale and a median of .90 for the Trait subscale. In the current sample, Cronbach’s alpha was .74 for the total STAI score and .88 for the Trait Subscale.

Procedure

The participants for this study were recruited from a large, urban police department in the northeastern United States. Participants were selected during breaks in between training sessions that were unrelated to the study, creating a convenience sample. The data collection was done in person, at the site of the training sessions. The data was gathered over the course of three years as part of a larger study on personality traits in law enforcement (Falkenbach et al., 2017a; Falkenbach et al., 2018a, Falkenbach et al., 2018b). All procedures for the present study were approved by the Institutional Research Board, and consent from the participants was gained at the time of data collection. After obtaining consent and assuring them that participation was voluntary and distinct from the training session, the participants completed a demographic questionnaire, and the below measures were administered in randomized order. The entire survey took about 90 minutes for each participant to complete, and a meal was provided afterwards as compensation for participation. Individuals who left out information about rank, who did not answer the PPI-R in full, or who had invalid responses (as per the PPI-R Inconsistent Responding scale; Lilienfeld & Widows, 2005) were excluded from the analysis.

Results

Descriptive statistics and preliminary analyses were performed to assess the distribution of PPI-R scores and determine any effects from the officer demographics. These scores were also compared to those of a student sample. Then correlation and Pearson's r analyses were run to assess the associations between the subscale scores of the PPI-R and scores of the aforementioned tests. Next, analysis of variance (ANOVA) and multivariate analysis (MANOVA) were run to assess for differences in mean scores on the PPI-R and its factors amongst the officer ranks, followed by Tukey's post-hoc analyses to identify where these

differences were. Analysis of covariance (ANCOVA) was run to control for the impact of officer age and the time spent working on the police force on the rank differences in PPI-R total and factor scores. Additional ANOVA were run to assess for rank differences in mean scores on the AQ, BIS/BAS, IRI, NPI, PANAS, and STAI, also followed by Tukey's post-hoc analyses to locate the differences.

Preliminary Analyses

Table 3 shows the mean scores with standard deviation for the PPI-R and factors by officer rank. The overall police PPI-R scores ($n = 1403$) ranged from 184 to 378, with a median of 278, a mean of 279.03, and a standard deviation of 226.97. FD scores ranged from 74 to 171 ($M = 126.16$, $SD = 16.10$), SCI scores ranged from 34.46 to 237 ($M = 116.54$, $SD = 21.64$), and CH scores ranged from 16 to 58.67 ($M = 36.35$, $SD = 6.72$). Compared to a student sample from the same city ($n = 88$), the police sample had significantly lower FD ($t(1488) = 5.12$, $p < .001$, $d = .57$), but significantly higher SCI ($t(1488) = -12.21$, $p < .001$, $d = -1.35$) and total PPI-R scores ($t(1488) = -5.72$, $p < .001$, $d = -.63$).

The total AQ scores ($n = 1387$) ranged from 31.29 to 145 ($M = 60.02$, $SD = 16.45$). Due to the nature of the BIS/BAS there is no total score. The BIS scores ($n = 1005$) ranged from 7 to 28 ($M = 17.36$, $SD = 3.47$). The BAS scores ($n = 997$) ranged from 14 to 52 ($M = 39.32$, $SD = 5.37$). The total IRI scores ($n = 1175$) ranged from 15 to 92 ($M = 57.50$, $SD = 10.87$). The total NPI scores ($n = 1395$) ranged from 0 to 39 ($M = 16.71$, $SD = 6.23$). Due to the nature of the PANAS there is no total score. The PANAS-P scores ($n = 1377$) ranged from 14 to 50 ($M = 40.68$, $SD = 5.84$). The PANAS-N scores ($n = 1377$) ranged from 10 to 50 ($M = 16.56$, $SD = 5.64$). The STAI-T scores ($n = 1379$) ranged from 20 to 60 ($M = 30.49$, $SD = 7.38$). Table 4 shows the mean scores with standard deviation for each measure by rank.

Prior to the main analyses, preliminary analyses were run to determine whether any demographic factors had an effect upon scores of the PPI-R. An independent samples t-test revealed significant differences in mean PPI-R scores between male ($M = 280.71$, $SD = 26.89$), and female ($M = 268.93$, $SD = 25.45$) officers ($t(1390) = 5.66$, $p < .001$, $d = .44$). A one-way ANOVA demonstrated that there were no significant differences in mean PPI-R scores between the officer races/ethnicities ($F(5, 1375) = 1.40$, $p = .22$, $\eta^2 = .005$).

Construct Validity

Correlations and Pearson's r analyses were run on the entire sample to assess the relationships between the factor scores of the PPI-R and scores of the AQ, BIS/BAS, IRI, NPI, PANAS, and STAI, as seen in Table 5. These analyses indicated that FD had significant negative correlations of moderate strength with the BIS ($r = -.46$, $p < .001$), PANAS-N ($r = -.29$, $p < .001$), and STAI-T ($r = -.43$, $p < .001$); while it had significant positive correlations with the BAS ($r = .32$, $p < .001$), NPI ($r = .49$, $p < .001$), and PANAS-P ($r = .40$, $p < .001$). SCI had significant positive correlations of moderate size with the AQ ($r = .56$, $p < .001$), PANAS-N ($r = .35$, $p < .001$), and STAI-T ($r = .48$, $p < .001$) and had a significant negative correlation with the PANAS-P ($r = -.31$, $p < .001$). CH was significantly negatively correlated with all measures except for the NPI ($r = .17$, $p < .001$). Its strongest correlations were with the BIS ($r = -.30$, $p < .001$) and the IRI ($r = -.50$, $p < .001$) both of which had moderate strength.

Group Comparisons

As shown in Table 3, an ANOVA was performed to determine if there were significant differences across the officer ranks in the sample (recruit, officer, sergeant, lieutenant, detective, executive) in terms of the mean PPI-R total. There was no significant difference between the ranks for total PPI-R scores ($F(5, 1397) = 1.31$, $p = .26$, $\eta^2 = .005$). A MANOVA was performed

to determine if there were significant differences across officer ranks for the PPI-R factor scores. Using Pillai's Trace, rank had a significant effect on the three factor scores of the PPI-R ($V = .07$, $F(15, 4191) = 6.47$, $p < .001$). A subsequent ANOVA showed significant difference across rank on the FD scores ($F(5, 1397) = 15.00$, $p < .001$, $\eta^2 = .05$), with Tukey's post-hoc analysis identifying the mean score as significantly greater in recruits than sergeants, lieutenants, and executives, and greater in officers than sergeants and executives. Additionally, ANOVA showed that the SCI scores were significantly different across rank ($F(5, 1397) = 4.63$, $p < .001$, $\eta^2 = .02$) with Tukey's post-hoc analysis identifying the mean score as significantly lower in recruits than sergeants. There were no other significant across rank differences for these factors. An ANOVA showed no significant difference between the ranks for CH ($F(5, 1397) = 1.58$, $p = .163$, $\eta^2 = .01$).

Several ANCOVA were performed to determine if the rank differences found in the previous analysis were influenced by officer age or time on the police force for the PPI-R total and factor scores. The results of these ANCOVA are shown in Table 6. When using officer age as a covariate there were no significant differences in rank for PPI-R total scores ($F(5, 1359) = .31$, $p = .919$, $\eta^2 = .001$). FD continued to show significant rank differences when accounting for officer age ($F(5, 1359) = 7.44$, $p < .001$, $\eta^2 = .03$), but in contrast with the previous differences, Bonferroni's post-hoc analysis did not identify lieutenants as having significantly different scores from recruits, while the scores of executives were only leaning towards significance differences with both recruits and officers. Similarly, SCI also showed significant rank differences when accounting for officer age ($F(5, 1359) = 5.30$, $p < .001$, $\eta^2 = .02$), with Bonferroni's post-hoc analysis identifying the same rank differences as the MANOVA. CH did not show any significant differences in rank with the covariate of time on the job ($F(5, 1359) =$

1.36, $p = .238$, $\eta^2 = .005$).

The results of the ANCOVA to determine differences across rank while considering time on the job as a covariate are shown in Table 7. As with the previous analyses, there were no significant differences in rank for PPI-R total scores when using time working as an officer as a covariate ($F(5, 1346) = .35$, $p = .881$, $\eta^2 = .001$). FD continued to show significant rank differences when accounting for time on the job ($F(5, 1346) = 8.69$, $p < .001$, $\eta^2 = .03$), but in addition to the previous differences, Bonferroni's post-hoc analysis also identified officers as having significantly lower scores than lieutenants. Similarly, SCI also showed significant rank differences when accounting for time on the job ($F(5, 1346) = 4.29$, $p = .001$, $\eta^2 = .02$), with Bonferroni's post-hoc analysis identifying the same rank differences as the previous analyses. CH did not show any significant differences in rank with the covariate of time on the job ($F(5, 1346) = 1.14$, $p = .339$, $\eta^2 = .004$).

As seen in Table 8, when taking into account both age and time on the job as a police officer as covariates, there were no significant differences in rank for PPI-R total scores ($F(5, 1315) = .35$, $p = .883$, $\eta^2 = .001$). FD continued to show significant rank differences when accounting for both age and time on the job ($F(5, 1315) = 8.36$, $p < .001$, $\eta^2 = .03$), with Bonferroni's post-hoc analysis identifying the mean score as significantly greater in both recruits and officers than sergeants, lieutenants, and executives. Similarly, SCI also showed significant rank differences when accounting for both age and time on the job ($F(5, 1315) = 3.96$, $p = .001$, $\eta^2 = .02$), with Bonferroni's post-hoc analysis identifying the mean score as significantly lower in recruits than sergeants. CH did not show any significant differences in rank with the covariate of time on the job ($F(5, 1315) = 1.10$, $p = .361$, $\eta^2 = .004$).

As seen in Table 4, several one-way ANOVA were performed to determine if there were

significant differences across the officer ranks in the sample (recruit, officer, sergeant, lieutenant, detective, executive) for the AQ, BIS/BAS, IRI, NPI, PANAS, and STAI. The scores of each measure were significantly different across rank. A Tukey post-hoc test found differences between ranks for each measure, often between recruits and sergeants. Recruits had lower scores than officers and sergeants on the AQ. On the BIS recruits had lower scores than sergeants and executives, but on the BAS, recruits had higher scores than sergeants and lieutenants. Officers had the greatest number of significant differences on the IRI with lower scores than recruits, sergeants, and detectives. For the NPI, recruits had higher scores than both officers, sergeants, and executives. The PANAS-P had the greatest number of significant differences: recruits had higher scores than sergeants, lieutenants, and detectives, while officers higher scores than lieutenants. Lastly, recruits had lower scores than sergeants on both the PANAS-N and STAI-T.

Discussion

Hypothesis 1: Although the officers in this study did not demonstrate the full range of psychopathic traits as described by Cleckley (1941) and Hare (1999), the correlates of the PPI-R factors were consistent with what is described in the literature with regards to aggression, affect, and interpersonal functioning (Crawley & Martin, 2006; DeMatteo et al., 2006; Warren & Clabour, 2009), providing some support to the first hypothesis of a similar nomological net for psychopathic traits in law enforcement and other community samples. As expected, FD was negatively related to empathy and anxiety, and positively related to positive affect and narcissism, as indicated by previous research (Fowles & Dindo, 2006; Skeem et al., 2011). Similarly, SCI was positively related to aggression, negative affect, and anxiety (Skeem et al., 2011). The characteristics that the current sample demonstrated include those previously identified as potentially beneficial to self and society, such as positive affect and increased

fearlessness (Bannish & Ruiz, 2003; Del Gaizo & Falkenbach, 2008).

Although the construct validity was largely similar to theory, behavioral inhibition and behavioral activation did not have the expected relationships. FD had a moderate positive relationship with BAS (impulsivity), and SCI had a weak positive relationship with BIS (anxiety). Previous research identified these relationships as the inverse of what was seen in this study, with FD relating to lower impulsivity and SCI relating to lower anxiety and higher impulsivity. Since the BAS measures impulsivity (Carver & White, 1994), one would expect it to have a stronger relationship with SCI than FD. Although these differences are not consistent with the initial theory, they do fit with results from other community samples (Falkenbach et al., 2013).

In the attempt to better define the nomological net of CH, these analyses revealed significant inverse relationships between it and all of the correlate measures except for narcissism. Berg and colleagues (2015) noted that correlates of CH had some overlaps with those of FD and SCI, which was similarly demonstrated here. FD and CH shared relationships of similar strength with aggression, behavioral inhibition, and negative affect, while SCI and CH shared relationships with narcissism and positive affect. That said, there were notable differences. Expectedly, the strongest relationship CH had was a negative correlation with empathy. This is consistent with previous research on the construct which demonstrated a lack of sentimentality and empathy (Berg et al., 2015). Additionally, CH had a uniquely negative relationship with behavioral activation. This, in conjunction with its negative relationship to anxiety, supports previous research into this construct (Berg et al., 2015). The lack of empathy and anxiety seen here adds support to previous findings indicating that police often emotionally detach themselves from job-related situations (Hogan et al., 2011; Falkenbach et al., 2017a).

Hypothesis 2: When the groups were compared across rank without covariates, the results indicated that recruits have significantly higher levels of the affective and interpersonal traits, those traits theorized as beneficial to law enforcement (i.e. FD), compared to sergeants, lieutenants, and executives, contrary to the second hypothesis, and that officers have higher levels of these traits compared to both sergeants and executives. When only age was controlled for, both recruits and officers did not demonstrate significant differences with lieutenants and executives. This may indicate that differences in these traits are more the result of social determinants than age-related ones. Interestingly, officers were significantly different from lieutenants when controlling for time working on the police force. This difference may be evidence of socialization resulting in different outcomes for different ranks of police officers (Perrott & Taylor, 1995). Using both age and time on the job as covariates, both recruits and officers scored significantly higher than sergeants, lieutenants, and executives, more closely resembling the time on the job-only covariate analysis, which offers support for socialization influencing rank differences.

The differences in FD were mirrored by the differences found in the correlate measures, with recruits scoring lower on trait anxiety and behavioral inhibition, traits theorized to correlate with FD, than sergeants, and positive affect scores being higher in recruits and officers than all other ranks. These results may be indicative of the affective and interpersonal aspects of psychopathy as a precursor to joining the police force since the overall police FD scores were higher than those of the student comparison sample, similar to the recruits in Falkenbach and colleagues (2018a). As per Perrott and Taylor (1995), different occupational experiences may result in different expressions of personality traits, particularly when it comes to community interaction. Therefore, higher levels of affective and interpersonal traits could reflect the civilian-

facing duties of patrol work with regards to fearlessly taking control of fraught situations.

Hypothesis 3: Inconsistent with the third hypothesis, higher ranking officers did not have lower levels of the impulsive and antisocial traits (i.e. SCI) compared those in lower ranks. In fact, the only significant difference was that recruits had lower levels than the sergeants. The other ranks showed no consistent pattern in the scores, even when controlling for age and time on the job. The positive correlates of this factor—aggression, negative affect, and anxiety—showed similar differences between recruits and sergeants, in addition to being consistent with the literature. Behavioral activation, identified as a positive correlate in the literature (Skeem et al., 2011), has a more inconsistent relationship, with recruits scoring higher than sergeants. These differences are likely influenced by the large sample sizes of the recruits and sergeants and relatively smaller sample sizes of the other ranks. Even so, the police scores for this were lower than those of the student comparison, indicating that individuals high in these traits may simply not be hired on to the police force, as suggested by Koepfler and colleagues (2012).

Hypothesis 4: There were no rank differences in terms of CH, with the scores remaining fairly consistent throughout the sample, even when taking age and time on the job into account. Additionally, the scores were in-line with those of the student sample. For its correlates, there were rank differences for empathy, with officers having lower empathy than recruits, sergeants, and detectives. This may again relate to Perrott and Taylor's (1995) theory that personality traits differ for those who engage in more community interactions based on differing occupational requirements. Officers may be more likely to work directly with civilians which may expose them to more emotionally valent situations, thereby minimizing empathy with others as a job necessity.

Separate from the initial hypotheses, recruits and sergeants continued to exhibit the

greatest number of differences among the ranks across the correlate measures. Again, these two groups had the largest sample sizes. Notably, positive affect was significantly higher in recruits than sergeants, lieutenants, and detectives which may be indicative of an increased emotional compartmentalization after working on the police force for an extended period of time. As highlighted in previous studies, this could allow for increased detachment from job stressors (Bakker & Heuven, 2006; Hogan et al., 2011). Conversely, lower positive affect in higher ranks may indicate a dissatisfaction with one's job after prolonged exposure to such stressors.

Although socialization may contribute to the rank differences in these traits subsequent to joining the police force, greater amounts of prosocial affective-interpersonal aspects of psychopathy may incline someone towards joining law enforcement in the first place. In conjunction with previous research, this study points towards heroic traits as a reflection of psychopathic traits (Falkenbach et al., 2018b).

Limitations and Future Research

The primary limitation of the present study is the use of only self-report measures, which could have allowed subjects to depict themselves in a more positive and socially acceptable manner, as noted in Falkenbach and colleagues (2018a). Future studies should include both in-person interviews to provide behavioral indicators, such as proneness to boredom and compulsive lying, and supplemental information from colleagues and other sources to account for the subjectivity and bias of self-report measures (Koepfler et al., 2012). Additionally, participants were all sampled from a single police force in a major urban setting. This could have introduced potentially confounding variables from their environment. There is no research that indicates whether these results will be the same in other contexts, such as a smaller or more rural setting, which hinders the external validity. Because of this, the generalizability of this study

does not extend to police departments in other locales where the duties and daily experience of police officers may vary. Further research must be conducted in other settings to determine the extent of any possible differences.

This study approximated success with a “heroic” profession, but it is not necessarily an equivalent comparison to pro-social traits, similar to the previous research on CEOs (Babiak et al., 2010) and U.S. presidents (Lilienfeld et al., 2012). Falkenbach and colleagues (2018a) commented that this approximation is more indicative of “social stability” than “success.” Future research should find more specific measures of “success” and positive behavior in law enforcement, such as department awards or public feedback, to avoid any confounds between a socially acceptable profession and socially acceptable behavior (Henson et al., 2010). Future studies could also include longitudinal research by starting with potential recruits as they first apply to join the police force, and then following up with these participants to account for the changes in personality and behavior over time. This may help to understand how individuals could adapt to working within the police force, or how this work may self-select traits. Additionally, future studies should examine the PPI-R subscales in the context of police ranks to see what is driving the differences demonstrated in the present research.

The gender disparity of the current sample was also a limitation of the present study. The preliminary analyses demonstrated significant gender differences in total psychopathy scores for the sample, with males scoring higher than females. Falkenbach and colleagues (2015, 2017b, 2018b) reported differences between male and female participants for both psychopathy scores and those of related traits. Even so, the current sample had a very small proportion of females compared to males, which did not allow for analysis by rank. Police work is often considered a “male-dominated” field (Henson et al., 2010), therefore further research must be done on gender

differences in a law enforcement sample to better clarify the presence of psychopathic traits in this population. Similarly, differences have been noted in psychopathy and related constructs across culture (e.g. Issa, Falkenbach, Trupp, Campregher & Lap, 2017) and race (Gatner, Blanchard, Douglas, Lilienfeld & Edens, 2016). These potential covariates must be considered in future research.

Conclusions and Implications

The present study expanded upon the existing literature for successful psychopathy by examining how this construct and its associated traits differ among police ranks. This study provides further evidence for the adaptive nature of psychopathic traits in a “heroic” law enforcement context, as first postulated by Lykken (1995). It builds upon the work done by Falkenbach and colleagues (2017a, 2018a, 2018b) by examining differences within a police department in regards to psychopathic traits and their correlates. Consistent with the existing literature (Del Gaizo & Falkenbach, 2008; Babiak et al., 2010; Lilienfeld et al., 2012; Howe et al., 2013), the results suggest that *some* aspects of psychopathy, such as FD, are potentially adaptive to working in a law enforcement context by enabling them to take control in strenuous situations, stay calm under pressure, and withstand emotionally-charged interactions (Lorinkas & Kulis, 1986; Kop & Euwema, 2001; Goma-i-Freixanet & Wismeijer, 2002; Bannish & Ruiz, 2003; Bakker & Heuven, 2006).

The goal of this study was not to imply that police officers are psychopaths; rather it was to gain a broader understanding of the relationship between psychopathy, its correlates, and police rank. This study gives further support to the hypothesis that the psychopathic traits and correlates found in other non-criminal populations are also present in a law enforcement context. Law enforcement agencies and police departments may benefit from this line of research in

terms of recruiting new officers, evaluating job performance, and assigning responsibilities to current members of the force to better account for stress and individual capabilities by identifying what about police socialization encourages or discourages certain personality traits. By furthering the research on psychopathy in noncriminal and pro-social populations, a more nuanced depiction of the profile can be developed, which will help in terms of assessment, treatment, and what may predispose someone to develop psychopathic traits.

References

- Babiak, P., Neumann, C. S., & Hare, R. D. (2010). Corporate psychopathy: Talking the walk. *Behavioral Sciences and the Law, 28*(2), 174-193. DOI:10.1002/bsl.925
- Bakker, A. B. & Heuven, E. (2006). Emotional dissonance, burnout, and in-role performance among nurses and police officers. *International Journal of Stress Management, 13*(4), 423-440. DOI:10.1037/1072-5245.13.4.423
- Balash, J., & Falkenbach, D. M. (2018). The ends justify the meanness: An investigation of psychopathic traits and utilitarian moral endorsement. *Personality and Individual Differences, 127*, 127-132.
- Bannish, H. & Ruiz, J. (2003). The antisocial police personality: A view from the inside. *International Journal of Public Administration, 26*(7), 831-881. DOI:10.1081/PAD-120019322
- 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*(3), 340-350. DOI:10.1037/1040-3590.15.3.340
- Benning, S. D., Venables, N. C., & Hall, J. R. (2018). Successful psychopathy. In C. J. Patrick (Ed.), *Handbook of Psychopathy* (pp. 585-608). New York, NY, US: Guilford Press.
- Berg, J. M., Hecht, L. K., Latzman, R. D., & Lilienfeld, S. O. (2015). Examining the correlates of the Coldheartedness factor of the Psychopathic Personality Inventory–Revised. *Psychological Assessment, 27*(4), 1494-1499. DOI:10.1037/pas0000129
- Buss, A. H. & Warren, W. L. (2000). *Aggression Questionnaire: Manual*. Los Angeles, CA, US: Western Psychological Services.

- Carver, C. S. & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, 67(2), 319-333. DOI:10.1037/0022-3514.67.2.319
- Cleckley, H. (1941). *The Mask of Sanity*. St. Louis, MO, US: C. V. Mosby.
- Coid, J., Yang, M., Ullrich, S., Roberts, A., & Hare, R. D. (2009). Prevalence and correlates of psychopathic traits in the household population of Great Britain. *International Journal of Law and Psychiatry*, 32(2), 65-73. DOI:10.1016/j.ijlp.2009.01.002
- Crawley, T. & Martin, F. H. (2009). Impulsive-aggression, antisocial behaviour and subclinical psychopathy: Preliminary findings from an undergraduate female sample. *Psychiatry, Psychology, and Law*, 13(2), 232-242. DOI:10.1375/pplt.13.2.232
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44(1), 113-126. DOI:10.1037/0022-3514.44.1.113
- Del Gaizo, A. L. & Falkenbach, D. M. (2008). Primary and secondary psychopathic-traits and their relationship to perception and experience of emotion. *Personality and Individual Differences*, 45(3), 206-212. DOI:10.1016/j.paid.2008.03.019
- DeMatteo, D., Heilbrun, K., & Marczyk, G. (2006). An empirical investigation of psychopathy in a noninstitutionalized and noncriminal sample. *Behavioral Sciences & The Law*, 24(2), 133-146. DOI:10.1002/bsl.667
- Donnella, L. (2016, July 7). Two days, two deaths: The police shootings of Alton Sterling and Philando Castile. *NPR*. Retrieved from <http://www.npr.org/sections/codeswitch/2016/07/07/485078670/two-days-two-deaths-the-police-shootings-of-alton-sterling-and-philando-castile>.

- Edens, J. F., Marcus, D. K., Lilienfeld, S. O., & Poythress, N. G. (2006). Psychopathic, not psychopath: Taxometric evidence for the dimensional structure of psychopathy. *Journal of Abnormal Psychology, 115*(1), 131-144. DOI:10.1037/0021-843X.115.1.131
- Falkenbach, D. M. (2004). *The subtypes of psychopathy and their relationship to hostile and instrumental aggression*. (Doctoral dissertation). University of South Florida, Tampa, FL. (AAI3332782).
- Falkenbach, D. M., Barese, T. H., Balash, J., Reinhard, E. E., & Hughs, C. J. (2015). The exploration of subclinical psychopathic subtypes and their relationship with types of aggression in female college students. *Personality and Individual Differences, 85*, 117-122. DOI:10.1016/j.paid.2015.04.018
- Falkenbach, D. M., Balash, J., Tsoukalas, M., Stern, S., & Lilienfeld, S. O. (2018a). From theoretical to empirical: Considering reflections of psychopathy across the thin blue line. *Personality Disorders: Theory Research and Treatment, 9*(5), 420–428. DOI:10.1037/per0000270
- Falkenbach, D. M., Glackin, E., & McKinley, S. (2018b). Twigs on the same branch? Identifying personality profiles in police officers using psychopathic personality traits. *Journal of Research in Personality, 76*, 102-112. DOI:10.1016/j.jrp.2018.08.002
- Falkenbach, D. M., McKinley, S., & Roelofs Larson, F. R. (2017a). Two sides of the same coin: Psychopathy case studies from an urban police department. *Journal of Forensic Psychology Research and Practice, 17*(5), 338–356. DOI:10.1080/24732850.2017.1378860
- Falkenbach, D. M., Reinhard, E. E., & Roelofs Larson, F. R. (2017b). Theory based gender differences in psychopathy subtypes. *Personality and Individual Differences, 105*, 1-6.

DOI:10.1016/j.paid.2016.09.023

- Falkenbach, D. M., Stern, S., & Creevy, C. (2014). Psychopathy variants: Empirical evidence supporting a subtyping model in a community sample. *Personality Disorders: Theory, Research and Treatment, 5*(1), 10-19. DOI:10.1037/per0000021
- Fowles, D. C. (2018). Temperament risk factors for psychopathy. In C. J. Patrick (Ed.), *Handbook of Psychopathy* (pp. 94-123). New York, NY, US: Guilford Press.
- Fowles, D. C. & Dindo, L. (2006). A dual-deficit model of psychopathy. In C. J. Patrick (Ed.), *Handbook of Psychopathy* (pp. 14-34). New York, NY, US: Guilford Press.
- Goff, P. A., Lloyd, T., Geller, A., Raphael, S., & Glaser, J. (2016). The science of justice: Race, arrests, and police use of force. *Center for Policing Equality*. Los Angeles, CA. Retrieved from http://policingequity.org/wp-content/uploads/2016/07/CPE_SoJ_Race-Arrests-UoF_2016-07-08-1130.pdf
- Goma-i-Freixanet, M. & Wismeijer, A. A. J. (2002). Applying personality theory to a group of police bodyguards: A physically risky prototype. *Psicothema, 14*(2), 387-392. ISSN: 0214-9915
- Hare, R. D. (1996). Psychopathy: A clinical construct whose time has come. (Special Issue: The State of the Science and Art of Criminal Justice and Behavior). *Criminal Justice and Behavior, 23*(1), 25-54. DOI:10.1177/0093854896023001004
- Hare, R. D. (1999). *Without Conscience: The Disturbing World of the Psychopaths Among Us*. New York, NY, US: Guilford Press.
- Hare, R. D. (2003). *Manual for the Revised Psychopathy Checklist* (2nd ed.). Toronto, ON, CN: Multi-Health Systems.
- Henson, B., Reynolds, B. W., Klahm, C. F., & Frank, J. (2010). Do good recruits make good cops?

- Problems predicting and measuring academy and street-level success. *Police Quarterly*, 13(1), 5-26. DOI:10.1177/1098611109357320
- Hogan, J., Bennell, C., & Taylor, A. (2011). The challenges of moving into middle management: Responses from police officers. *Journal of Police and Criminal Psychology*, 26, 100-111. DOI:10.1007/s11896-010-9077-4
- Howe, J., Falkenbach, D. M., & Massey, C. (2014). The relationship among psychopathy, emotional intelligence, and professional success in finance. *International Journal of Forensic Mental Health*, 13(4), 337-347. DOI:10.1080/14999013.2014.951103
- Issa, M., Falkenbach, D.M., Trupp, G.F., Campregher, J. & Lap, J. (2017). A cross-cultural assessment of psychopathy in a Lebanese college sample: The PPI-R in the context of borderline features and aggressive attitudes. *Personality and Individual Differences*. 105(15). 64-69.
- Koepfler, J., Brewster, J., Stoloff, M., & Saville, B. (2012). Predicting police aggression: Comparing traditional and non-traditional prediction models. *Journal of Police and Criminal Psychology*, 27(2), 141-149. DOI:10.1007/s11896-012-9101-y
- Kop, N. & Euwema, M. (2001). Occupational stress and the use of force by Dutch police officers. *Criminal Justice and Behavior*, 28(5), 631-652. DOI:10.1177/009385480102800505
- Law, H. & Falkenbach, D.M., (2018). Hostile attribution bias as a mediator between psychopathy, narcissism, and aggression. *International Journal of Offender Therapy*, 62(11), 3355-3371.
- Lilienfeld, S. O. & Andrews, B. P. (1996). Development and preliminary validation of a self-report measure of psychopathic personality traits in noncriminal populations. *Journal of*

- Personality Assessment*, 66(3), 488-524. DOI:10.1207/s15327752jpa6603_3
- 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(3), 489-505. DOI: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(4), 298-303.
DOI:10.1177/0963721415580297
- Lilienfeld, S. O. & Widows, M. R. (2005). *Psychopathic Personality Inventory - Revised: Professional Manual*. Lutz, FL, US: Psychological Assessment Resources, Inc.
- Lorinkas, R. A. & Kulis, J. C. (1986). The military model and policing: A misunderstood ideology. *Police Studies: International Review of Police Development*, 9(4), 184-193.
ISSN: 01412949
- Lykken, D. T. (1995). *The Antisocial Personalities*. Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.
- Oberfield, Z. W. (2012). Socialization and self-selection: How police officers develop their views about using force. *Administration & Society*, 44(6), 703-730.
DOI:10.1177/0095399711420545
- Perrott, S. B. & Taylor, D. M. (1995). Attitudinal differences between police constables and their supervisors: Potential influences of personality, work environment, and occupational role. *Criminal Justice and Behavior*, 22(3), 326-339. DOI:10.1177/0093854895022003009
- 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(5), 890-902. DOI:10.1037/0022-3514.54.5.890

Schafer, J. A. & Varano, S. P. (2017). Change in police organizations: Perceptions, experiences, and the failure to launch. *Journal of Contemporary Criminal Justice*, 33(4), 392-410.

DOI:10.1177/1043986217724532

Skeem, J. L., Polaschek, D. L. 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(3), 95-162.

DOI:10.1177/1529100611426706

Skeem, J. L., Poythress, N., Edens, J. F., Lilienfeld, S. O., & Cale, E. M. (2003). Psychopathic personality or personalities? Exploring potential variants of psychopathy and their implications for risk assessment. *Aggression and Violent Behavior*, 8(5), 513–546.

DOI:10.1016/S1359-1789(02)00098-8

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. D. (1970). *STAI: Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA, US: Consulting Psychologists Press.

Spielberger, C. D. & Reheiser, E. C. (2009). Assessment of emotions: Anxiety, anger, depression, and curiosity. *Applied Psychology: Health and Well-Being*, 1(3), 271-302.

DOI:10.1111/j.1758-0854.2009.01017.x

Tellegen, A. & Ben-Porath, Y. S. (2008). *MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2 Restructured Form)*. Minneapolis, MN, US: University of Minnesota Press.

Warren, G. C. & Clarbour, J. (2009). Relationship between psychopathy and indirect aggression use in a noncriminal population. *Aggressive Behavior*, 35(5), 408-421.

DOI:10.1002/ab.20317

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures

of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. DOI:10.1037/0022-3514.54.6.1063

Widom, C. S. (1977). A methodology for studying noninstitutionalized psychopaths. *Journal of Consulting and Clinical Psychology*, 45(4), 674-683. DOI:10.1037/0022-006X.45.4.674

Appendix A: Tables

Table 1 *Demographics of current sample*

		Total	Recruit	Officer	Sergeant	Lieutenant	Detective	Executive
	n	1403 (100%)	800 (57%)	95 (6.8%)	396 (28.2%)	67 (4.8%)	31 (2.2%)	14 (1%)
Age	M (SD)	29.79 (6.33)	26.10 (3.72)	33.20 (4.47)	33.77 (5.47)	38.13 (5.66)	40.63 (6.20)	39.31 (3.99)
	Range	21-59	21-40	24-48	23-57	30-59	32-53	33-47
	Missing	37 (2.6%)	24 (3.0%)	-	11 (2.8%)	-	1 (3.2%)	1 (7.1%)
Months on the Job	M (SD)	55.24 (68.07)	4.92 (8.63)	103.59 (44.69)	106.77 (41.67)	157.03 (55.19)	213.45 (84.47)	195.77 (57.81)
	Range	0-396	0-180	1-317	10-376	95-396	90-370	120-320
	Missing	50 (3.6%)	42 (5.3%)	-	6 (1.5%)	1 (1.5%)	-	1 (7.1%)
Gender	Male	1202 (85.7%)	679 (84.9%)	88 (92.6%)	339 (85.6%)	59 (88.1%)	27 (87.1%)	10 (71.4%)
	Female	190 (13.5%)	113 (14.1%)	7 (7.4%)	54 (13.6%)	8 (11.9%)	4 (12.9%)	4 (28.6%)
	Missing	11 (0.8%)	8 (1.0%)	-	3 (0.8%)	-	-	-
Race/Ethnicity	White/ European-American	825 (58.8%)	464 (58.0%)	68 (71.6%)	219 (55.3%)	40 (59.7%)	23 (74.2%)	11 (78.6%)
	Hispanic/Latinx	288 (20.5%)	169 (21.1%)	14 (14.7%)	87 (22.0%)	14 (20.9%)	3 (9.7%)	1 (7.1%)
	Black/ African-American	160 (11.4%)	87 (10.9%)	8 (8.4%)	49 (12.4%)	10 (14.9%)	5 (16.1%)	1 (7.1%)
	Asian/ Pacific Islander	88 (6.3%)	58 (7.2%)	3 (3.2%)	24 (6.1%)	3 (4.5%)	-	-
	American Indian/ Alaska Native	1 (0.1%)	-	-	1 (0.3%)	-	-	-
	Other	19 (1.4%)	9 (1.1%)	1 (1.1%)	8 (2.0%)	-	-	1 (7.1%)
	Missing	22 (1.6%)	13 (1.6%)	1 (1.1%)	8 (2.0%)	-	-	-

Table 2 *Subscales of the Psychopathic Personality Inventory*

Subscale	Description of a high scorer
Impulsive Nonconformity (17 items)	Reckless, rebellious, unconventional
Blame Externalization (18 items)	Blames others and rationalizes own transgressions
Machiavellian Egocentricity (30 items)	Aggressive and self-centered in interactions with others
Carefree Nonplanfulness (20 items)	Present-oriented; lacks forethought and planning
Stress Immunity (11 items)	Experiences minimal anxiety
Social Potency (24 items)	Able to manipulate and influence others
Fearlessness (19 items)	Willing to take risks; lacks concern for harmful consequence
Coldheartedness (21 items)	Unsentimental; lacks imaginative capacity; unreactive to others' distress

(Source: Benning et al., 2003, p. 343)

Table 3 Significant differences between ranks for PPI-R total and factor scores

		Total	Recruit	Officer	Sergeant	Lieutenant	Detective	Executive	F	η^2
PPI-R	M	279.03	280.06	280.8	278.06	276.09	271.46	270.45	(5, 1397) = 1.31	.01
	SD	26.97	26.69	26.99	27.43	28.98	22.85	26.29		
FD	M	126.16	128.85 ^{c***d***f**}	128.66 ^{c***f**}	121.61 ^{a***b***}	121.72 ^{a**}	122.85	113.56 ^{a**b**}	(5, 1397) = 14.96	.05
	SD	16.10	15.65	15.46	15.98	16.29	12.06	17.41		
SCI	M	116.54	114.63 ^{c***}	115.04	120.77 ^{a***}	117.03	113.54	120.12	(5, 1397) = 4.63	.02
	SD	21.64	21.49	21.31	21.34	23.85	18.93	21.56		
CH	M	36.35	36.61	36.58	35.68	37.35	35.07	36.78	(5, 1397) = 1.58	.01
	SD	6.72	6.92	6.78	6.42	6.43	5.06	6.96		

Superscript letters indicate which ranks have significant differences in means: a = recruit, b = officer, c = sergeant, d = lieutenant, e

= detective, f = executive; significance level indicated by * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4 Significant differences between ranks for scores on correlate measures

		Total	Recruits	Officer	Sergeant	Lieutenant	Detective	Executive	F	η^2
AQ Total	M	60.02	58.17 ^{b***c***}	64.13 ^{a**}	62.50 ^{a***}	61.95	61.65	55.77	(5, 1381) = 5.47	.02
	SD	16.45	16.51	17.37	16.01	15.78	13.69	13.66		
BIS Total	M	17.36	16.79 ^{c***f*}	17.56	17.87 ^{a***}	17.65	18.48	19.62 ^{a*}	(5, 999) = 6.07	.03
	SD	3.47	3.51	3.73	3.39	3.62	2.73	3.04		
BAS Total	M	39.32	40.04 ^{c**d*}	39.53	38.69 ^{a**}	37.91 ^{a*}	37.90	36.45	(5, 991) = 4.54	.02
	SD	5.37	5.32	5.47	5.47	4.81	4.36	4.08		
IRI Total	M	57.50	58.15 ^{b***}	52.76 ^{a***c***e*}	57.50 ^{b**}	56.78	59.83 ^{b*}	58.32	(5, 1169) = 4.39	.02
	SD	10.87	10.67	11.33	10.32	11.17	8.09	14.59		
NPI Total	M	16.71	17.55 ^{b***c***f*}	14.62 ^{a***}	15.98 ^{a***}	15.46	14.94	12.62 ^{a*}	(5, 1389) = 8.47	.03
	SD	6.23	6.07	6.15	6.37	5.98	6.60	3.55		
PANAS-P	M	40.68	41.62 ^{c***d***e**}	40.88 ^{d*}	39.28 ^{a***}	38.37 ^{a***b*}	38.00 ^{a**}	38.83	(5, 1371) = 12.46	.04
	SD	5.84	5.61	5.53	5.82	6.63	6.23	4.84		
PANAS-N	M	16.56	15.97 ^{c***}	17.33	17.48 ^{a***}	17.04	15.84	19.92	(5, 1371) = 5.25	.02
	SD	5.64	5.20	5.99	6.05	6.48	4.97	9.37		
STAI-T	M	30.49	29.60 ^{c***}	31.15	31.99 ^{a***}	30.04	31.87	34.62	(5, 1373) = 6.85	.02
	SD	7.38	7.21	6.85	7.60	7.04	7.08	9.14		

Superscript letters indicate which ranks have significant differences in means: a = recruit, b = officer, c = sergeant, d = lieutenant, e

= detective, f = executive; significance level indicated by * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5 *Correlations between subscales of the PPI-R and other measures*

	AQ Total	BIS	BAS	IRI Total	NPI Total	PANAS-P	PANAS-N	STAI-T
PPI-R Total	0.40***	-0.22***	0.28***	-0.13***	0.42***	-0.03	0.07*	0.10***
Fearless Dominance	-0.06*	-0.46***	0.32***	-0.06*	0.49***	0.40***	-0.29***	-0.43***
Self-Centered Impulsivity	0.56***	0.15***	0.16***	0.04	0.11***	-0.30***	0.35***	0.48***
Coldheartedness	-0.06*	-0.30***	-0.12***	-0.50***	0.17***	-0.08**	-0.17***	-0.12***
Machiavellian Egocentricity	0.57***	0.15***	0.22***	-0.03	0.20***	-0.19***	0.32***	0.37***
Impulsive Nonconformity	0.42***	0.03	0.28***	0.14***	0.17***	-0.11***	0.23***	0.29***
Blame Externalization	0.48***	0.23***	0.05	0.10***	-0.03	-0.25***	0.35***	0.47***
Carefree Nonplanfulness	0.25***	0.08**	-0.11***	-0.06	-0.03	-0.39***	0.19***	0.35***
Social Potency	-0.11***	-0.35***	0.26***	0.03	0.59***	0.43***	-0.26***	-0.42***
Fearlessness	0.24***	-0.14***	0.36***	-0.01	0.20***	0.10***	0.04	0.02
Stress Immunity	-0.34***	-0.57***	0.02	-0.19***	0.25***	0.34***	-0.48***	-0.60***

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

Table 6 Significant differences between ranks for PPI-R total and factor scores with age as a covariate

		Total	Recruit	Officer	Sergeant	Lieutenant	Detective	Executive	F	η^2
PPI-R	M	279.13	280.16	280.28	272.11	278.08	276.09	272.40	(5, 1359) = .32	.001
Total	SD	27.06	26.76	26.99	22.95	27.61	28.98	26.28		
FD	M	126.22	128.84 ^{c***}	128.66 ^{c**}	123.45 ^{a***b**}	121.73	121.72	114.37	(5, 1359) = 7.44	.03
	SD	16.12	15.68	15.46	11.79	16.06	16.29	17.84		
SCI	M	116.59	114.76 ^{c***}	115.04	113.49 ^{a***}	120.69	117.03	121.28	(5, 1359) = 5.30	.02
	SD	21.65	21.47	21.31	19.25	21.42	23.85	21.97		
CH	M	36.33	36.58	36.58	35.18	35.66	37.35	36.76	(5, 1359) = 1.36	.01
	SD	6.74	6.93	6.78	5.11	6.46	6.43	7.25		

Superscript letters indicate which ranks have significant differences in means: a = recruit, b = officer, c = sergeant, d = lieutenant, e

= detective, f = executive; significance level indicated by * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7 Significant differences between ranks for PPI-R total and factor scores with time on the job as a covariate

		Total	Recruit	Officer	Sergeant	Lieutenant	Detective	Executive	F	η^2
PPI-R	M	279.21	280.30	280.28	271.46	278.14	276.52	272.40	(5, 1346) = .35	.001
Total	SD	27.13	26.87	26.99	22.85	27.62	28.99	26.28		
FD	M	126.14	128.81 ^{c***d***f**}	128.66 ^{c**d*f**}	122.85 ^{a***b**}	121.68 ^{a**b*}	121.97	114.37 ^{a**b**}	(5, 1346) = 8.69	.03
	SD	16.21	15.84	15.46	12.06	16.05	16.28	17.84		
SCI	M	116.74	114.88 ^{c**}	115.04	113.54 ^{a**}	120.77	117.21	121.28	(5, 1346) = 4.29	.02
	SD	21.74	21.61	21.31	18.93	21.44	23.99	21.97		
CH	M	36.36	36.63	36.58	35.07	35.69	37.34	36.76	(5, 1346) = 1.14	.004
	SD	6.71	6.89	6.78	5.06	6.44	6.48	7.25		

Superscript letters indicate which ranks have significant differences in means: a = recruit, b = officer, c = sergeant, d = lieutenant, e

= detective, f = executive; significance level indicated by * $p < .05$, ** $p < .01$, *** $p < .001$

Table 8 Significant differences between ranks for PPI-R total and factor scores with both age and time on the job as covariates

		Total	Recruit	Officer	Sergeant	Lieutenant	Detective	Executive	F	η^2
PPI-R	M	279.27	280.37	280.28	272.11	278.15	276.52	272.40	(5, 1315) = .35	.001
Total	SD	27.19	26.93	26.99	22.95	27.74	28.99	26.28		
FD	M	126.16	128.78 ^{c***d**f**}	128.66 ^{c***d*f**}	123.45 ^{a***b**}	121.80 ^{a**b*}	121.97	114.37 ^{a**b**}	(5, 1315) = 8.36	.03
	SD	16.21	15.84	15.46	11.79	16.10	16.28	17.84		
SCI	M	116.79	115.02 ^{c**}	115.04	113.49 ^{a**}	120.67	117.21	121.28	(5, 1315) = 3.96	.02
	SD	21.74	21.59	21.31	19.25	21.50	23.99	21.97		
CH	M	36.33	36.59	36.58	35.18	35.68	37.34	36.76	(5, 1315) = 1.10	.004
	SD	6.73	6.90	6.78	5.11	6.47	6.48	7.25		

Superscript letters indicate which ranks have significant differences in means: a = recruit, b = officer, c = sergeant, d = lieutenant, e

= detective, f = executive; significance level indicated by * $p < .05$, ** $p < .01$, *** $p < .001$