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Adaptive Traits Associated with Psychopathy in a "Successful," Non-Criminal Population

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Abstract

Recently, a growing body of research has begun to examine the existence of "successful" psychopaths – those who remain functional and non-institutionalized in society. Using the PPI-R, a self-report measure of psychopathy, this study investigated which psychopathic traits were present in a self-evidently "successful" population (N=40) at an elite, Ivy League university. Students scoring higher on the "Fearless Dominance" scale (PPI-I) were more likely to be younger, more politically active on campus, and oriented toward narcissistic careers in which social manipulation and risk-taking are crucial. They also displayed a more positive attributional style and were more tolerant of cheaters. Students scoring higher on the "Self-Centered Impulsivity" scale (PPI-II) exhibited more risk-acceptant, reward-seeking behavior in a card game and reported more disciplinary problems. Females scored higher than normal on the PPI-I, while males scored lower than normal. Implications for the "successful" psychopathy concept and the primary/secondary distinction in psychopathy are discussed.

Adaptive Traits Associated with Psychopathy in a "Successful," Non-Criminal Population

Early History and the DSM

Throughout the history of the discipline of psychology, the construct of psychopathy has been both one of the most researched as well as "one of the most enigmatic conditions in the field" (Lilienfeld & Widows, 2005). Evidence for the disorder can be found as far back as the early nineteenth century (Pinel, 1801, as cited in Arrigo & Shipley, 2001). During the nineteenth and early twentieth centuries, many psychiatrists, psychologists, physicians, and other researchers contributed to the body of knowledge on the condition, but the wide array of attributes and characterizations that they produced amounted to a jumbled conception of psychopathy that included a variety of symptoms and disorders (Lilienfeld & Widows, 2005).

Through the twentieth century, and especially since Hervey Cleckley's emergence in the field, the condition has been defined with greater specificity. Cleckley's (1941) tome, *The Mask of Sanity*, established sixteen standard personality features as criteria for a diagnosis of psychopathy; these include superficial charm, lack of empathy, self-centeredness, guiltlessness, and lack of anxiety and remorse, among others. Cleckley's work on the topic of psychopathy also contributed to the characterization of antisocial personality disorder, which is thought to encompass some aspects of psychopathy, in the Diagnostic and Statistical Manual of Mental Disorders (Lilienfeld & Widows, 2005). Recent versions of the DSM have come to emphasize the behavioral traits associated with psychopathy, which are more strongly associated with ASPD; this limited focus has, to a certain extent, come at the expense of the personality traits. Despite significant overlap, psychopathy and ASPD are two distinct disorders.

Part of the reason for this blurring between ASPD and psychopathy and the consequent intuitive association between psychopathy and criminality is the fact that many psychopaths

indeed interact with the criminal justice system on some level (O'Toole, 2007). Moreover, the popular conception of the psychopath is often of a dangerously violent criminal—a conception bolstered by the media (Lykken, 1996). In particular, a lack of remorse—an emotional deficit— and various types of antisocial behavior make psychopaths more likely to commit many types of crimes. Nonetheless, a diagnosis of psychopathy does not guarantee criminal behavior; as the discussion that follows will explicate, different psychopathic personality traits augur different behavioral manifestations of the disorder.

The PCL-R and Psychopathy's Multiple Factors

Robert Hare's contribution to the field, both singly (1980) and with colleagues (1991), further refined our conception of the many facets of psychopathy with the Psychopathy Checklist and later the Psychopathy Checklist – Revised; the latter has become the seminal diagnostic measure of psychopathy. Since its inception as a measure, there have been many attempts to catalogue the dimensions of psychopathy via factor analysis; such efforts have revealed anywhere between two and seven factors (Neumann, Kosson, & Salekin, 2007). Although researchers disagree on the precise number, it is now clear that at least two dimensions underlie the construct of psychopathy. Thus, subsequent measures have, at a minimum, differentiated between at least these two factors in their scales; the two most commonly used factors distinguish the emotional, personality attributes from the behavioral attributes of psychopathy. In fact, the PCL, and later the PCL-R, were designed at least partly to address this dichotomy within the construct of psychopathy (Hare, Hart, & Harpur, 1991). As Hare et al. (1991) note, prior to the PCL-R, psychopathy was arguably too strongly associated with ASPD; despite criticism that the *DSM-III-R* criteria for ASPD were limited to behavioral items that neglected

the more internal personality traits of the disorder, the *DSM-IV* continued in this vein, and psychopathy thus continued to be associated with this purely behavioral diagnostic measure.

The PPI-R and its Two Factors

Despite the progress achieved with the PCL-R, certain drawbacks remained; in particular, the measure requires an interview, is time-consuming, and relies extensively on background data (Lilienfeld & Andrews, 1996). Among the newer measures that effectively accommodate the multiple factors of psychopathy were a variety of self-report, expert rating, and other methodologies (Forth & Book, 2007). From these, the Psychopathic Personality Inventory emerged as an effective self-report measure of psychopathy (Lilienfeld & Widows, 2005). Now revised, the PPI-R measures psychopathy on two main factors: Factor 1, or PPI-I, has been characterized as measuring "Fearless Dominance," which reflects more personality-based traits; Factor 2, or PPI-II, has been labeled variously "Impulsive Antisociality" or "Self-Centered Impulsivity" and is taken to reflect the more behavioral traits associated with psychopathy. Sometimes considered a third factor, "Coldheartedness" stands distinct from the Fearless Dominance and Self-Centered Impulsivity categories (Benning et al., 2003; Lilienfeld & Widows, 2005). The two main factors of the PPI-R map conceptually onto the two corresponding factors of the PCL-R (i.e. PPI-I correlates moderately with Factor 1 of the PCL-R, and PPI-II correlates moderately with Factor 2 of the PCL-R); however, while the factors of the PCL-R correlate relatively well with each other, the two main factors of the PPI-R are uncorrelated, suggesting the existence of two "fundamentally separate dispositional dimensions" under the umbrella of psychopathy (Benning et al. 2003). The PPI-R has been well validated for use on both offender (Berardino et al., 2005; Patrick et al., 2006) and community (Lilienfeld & Andrews, 1996) samples.

Whereas research on psychopathy has traditionally focused on how it relates to criminality (Harris & Rice, 2007), with the advent of valid self-report measures like the PPI-R, the literature has expanded, somewhat marginally, to include the general population (e.g., Benning et al., 2003; Mullins-Nelson et al., 2006; Coid et al., 2009). The present study is in part an attempt to contribute to this growing trend of broadening the study of psychopathy.

The "Successful" Psychopath

Preempting current research into the multiple factors of psychopathy, and notwithstanding psychopathy's imprecise association with ASPD in the DSM, Cleckley (1941) noted that not all psychopaths exhibit antisocial behavior. As Lilienfeld and Widows (2005) paraphrase: "at least some psychopathic individuals have seemingly achieved a reasonably successful adjustment to society." This notion has led some researchers to seek out "successful" psychopaths. Widom (1977) began this line of inquiry by using newspaper advertisements to attract psychopaths who remained at large in the general population. Widom's advertisements were effective, as the participants in her study exhibited psychopathic traits according to several personality measures. These results demonstrated that not all psychopaths are institutionalized; the construct of psychopathy is relevant in noncriminal populations; and noncriminal psychopaths can be identified for research purposes. There is now a growing literature on the "successful" psychopath, including theories of how certain psychopathic traits may counterintuitively prove to be evolutionarily adaptive in certain situations (Hall & Benning, 2006).

This potentiality should not be surprising. For instance, Lykken (1996) posits a theory of psychopathy such that psychopaths are simply individuals with a "low fear quotient"—they feel some emotions normally, but not fear. Lykken (1996) suggests that because proper socialization

depends on conditioning people via punishment, and because this conditioning is only effective when people fear these punishments, individuals relatively deficient in fearfulness become relatively more difficult socialize. However, Lykken (1996) maintains that such socialization, while infrequent, can occur. In these rare cases, "a child with a low fear quotient, whose parents nonetheless succeed in instilling the essentials of good citizenship, would grow up to be the kind of person one would like to have on hand when stress and danger threaten" (Lykken, 1996). In other words, without proper socialization, an individual who suffers from a low fear quotient may become an antisocial, deviant psychopath; but with the right upbringing, these psychopaths may become exceptional benefactors to society.

Thus, certain professions, particularly those that may involve risk-taking and offer power and substantial personal benefit, may not only attract psychopathic personalities, but indeed some professionals may *benefit* from psychopathic traits; these could include test pilots, stuntmen, or even hedge fund managers. Recent scandals in the business world lend credence to this theory, as high-ranking executives, after long success, have been exposed as cheaters and liars (e.g. Bernie Madoff and the executives at Enron). Such risky personalities are even portrayed in popular culture, for instance by Leonardo DiCaprio, playing real-life conman Frank Abagnale, Jr. in the movie *Catch Me if You Can* (2002). These examples fit with one possibly stereotypical conception of the psychopath as a conman (Alvarez, 1999); more generally, they support the notion of "successful" psychopathy.

Indeed, Babiak and Hare's (2006) book, *Snake in Suits: When Psychopaths Go to Work*, describes in vivid detail examples of psychopaths successfully infiltrating businesses, scamming churches, and performing other reprehensible yet lucrative acts. These individuals, upon close examination, clearly exhibit psychopathic personalities, yet they operate anonymously in regular

society, their deviance unbeknownst to those around them until it is too late. Of course, these cases may in fact be criminal, but simply undetected. Nonetheless, they underscore the need to investigate the "successful" psychopath.

Primary versus Secondary Psychopathy

Historically, many researchers, drawing inspiration from Blackburn (1975), have differentiated between primary and secondary psychopaths (e.g., Jakobwitz & Egan 2006; Levenson et al., 1995; McHoskey, 1998). Coyne and Thomas (2008) define primary psychopaths as "individuals who generally show low levels of anxiety, empathy, fearlessness and emotion due to some intrinsic deficit rather than due to environmental or emotional difficulties;" on the other hand, "secondary psychopaths show more impulsiveness, anxiety, empathy, and guilt than their primary counterparts." Currently, however, primary psychopathy seems to reflect the most common conception of psychopathy, while secondary psychopathy may be better characterized as a form of sociopathy, or a subset of primary psychopathy.

Ross and Rausch (2001) have elaborated that primary and secondary psychopathy produce different levels of life success. In their study of a college sample, they found that primary psychopathy, which maps well onto the first factor of the PCL-R, correlated positively with hypercompetition; conversely, secondary psychopathy, which aligns with the second factor of the PCL-R, did not correlate with hypercompetition, instead correlating negatively with cooperation and goal engagement (Ross & Rausch, 2001). Ross and Rausch (2001) argue that their results suggest that primary psychopaths will be more successful than secondary psychopaths. Part of the reason for this may be that Factor 1 of the PCL-R, and by association primary psychopathy, is characterized by "the core personality traits of psychopathy," whereas Factor 2, and thus secondary psychopathy, reflects more "social deviance," or a more behavioral

manifestation of antisociality (Ross & Rausch, 2001). This theory of two groups of psychopaths, one more successful than the other, has been supported by subsequent research (e.g., Coyne & Thomas, 2008; Ishikawa et al., 2001).

Research on "Successful" Psychopathy

Although the majority of research on psychopathy has involved incarcerated populations, beginning with Widom (1977), some researchers took to identifying criminally active but at-large psychopaths, characterizing these individuals as "successful" for their ability to avoid imprisonment (e.g., Ishikawa et al., 2001; Levenson, Kiehl, & Fitzpatrick, 1995). More recently, limited research has examined the "successful" psychopath in order to clarify what psychopathic traits may in fact be adaptive. Levenson (1992) suggested that this may be the case when he posited that psychopaths, rather than being nonconformists in a sociological sense, products of poor socialization, or the result of physiological deficits in behavioral inhibition, instead simply possess a unique life philosophy; this philosophy consists of a selfish disregard for society's norms and moral values in favor of abject narcissism. Perhaps most importantly, Levenson (1992) further notes that there is nothing inherently self-destructive in this philosophy; in fact, several behaviors that likely result from it—e.g. lying, manipulating others, egocentricity, etc.—could prove to be adaptive.

The adaptiveness of certain psychopathic traits has been tested empirically with conflicting results. Levenson et al., in a study of university students, showed that thrill and adventure seeking were not correlated with psychopathy; this, the authors argued, dispelled the theory that psychopathic traits breed, in some cases, a "hero" complex (Levenson, et al., 1995; Lykken, 1996). Yet, Levenson et al.'s (1995) data do reveal positive correlations between disinhibition and boredom susceptibility and both primary and secondary psychopathy—though

the correlations were stronger with primary psychopathy. These traits, rather than being adaptive in the sense that they prompt individuals to take reckless risks and become heroes, may instead lead simply to increased activity, and therefore productivity. More recently, Ullrich, Farrington, and Coid (2008) claimed to disconfirm the hypothesis that various psychopathic traits are associated with life success as measured by "status and wealth" or "successful intimate relationships." However, their sample consisted entirely of 48-year-old men who all began in a "working-class, inner-city" environment, which is far from representative; furthermore, measuring a psychopath's success by his degree of "successful intimate relationships" seems somewhat self-defeating.

Conversely, several studies have found substantial evidence for adaptive traits associated with psychopathy. Ross and Rausch (2001), for example, found primary psychopaths to be highly competitive and low in self-handicapping—they didn't "place obstacles to [their] own success in order to preserve or enhance self-esteem"—both of which, one could argue, are potentially adaptive traits. In a study on autonomic stress reactivity and executive function by Ishikawa et al. (2001), "successful"—non-incarcerated—psychopaths exhibited better executive function and performed better on the Wechsler Memory Scale – Revised, than both unsuccessful psychopaths *and controls*. Board and Fritzon (2005), in a study of self-evidently "successful" individuals—business managers and executives from prominent companies in the UK—found that their participants scored similar to psychopaths on scales of histrionic, narcissistic, and compulsive personality disorders. Finally, Jakobwitz & Egan (2006) found a significant positive correlation between MACH-IV scores (a measure of machiavellianism) and psychopathy, with most of the effect coming from primary psychopathy. They also discuss a significant increase in MACH-IV scores from past studies; they "speculate that modern western society is much more

competitive and materialistic than even 20 years ago, and some degree of apparent psychopathy may be necessary to succeed in this type of society." Given these findings, there is a need for further research into the "successful" psychopathy construct and the specific psychopathic traits that may prove to be adaptive.

A Gap in the Research

As noted above, the study of psychopathy has expanded into the general population; the theory of psychopathy has evolved to include a conception of the "successful" psychopath who may function anonymously in society. However, to date, few studies have attempted to target specifically these successful psychopaths in the general population. Widom (1977) aimed to study noninstitutionalized psychopaths, but the participants in her study were nonetheless much more criminal than "normal;" most of the "successful" psychopaths she found been arrested, sometimes multiple times, but were convicted less often than their unsuccessful counterparts. Babiak and Hare (2006) continued in this tradition, examining behaviorally deviant but uncaught psychopaths. Yet, most research has failed to uncover individuals who refrain from the illicit and illegal behavior of those described in *Snakes in Suits* (2006) while still exhibiting personality traits associated with psychopathy. Board and Fritzon (2005), in their study of businessmen in the UK, came the closest, but their study was not explicitly aimed at examining psychopathy in their successful population.

The "successful" psychopaths that the current study has in mind are men or women who are aggressive, lacking in empathy, remorse, and fearfulness, but who nonetheless conform to society's norms of behavior. These traits would in fact aid these individuals in their life endeavors, helping them to "succeed" more easily where others would be hindered by their more cautious, empathic, and guilt-ridden personalities; indeed, these "successful" psychopaths may

be especially proficient in certain professions and at certain tasks. In light of this missing piece in the literature, the present study aims to analyze an overtly and intuitively "successful" population and examine the potential correlates of this particular brand of "successful" psychopathy. I have proceeded based on the following hypotheses:

1. I predicted that administration of the PPI-R would reveal a greater prevalence of psychopathy in the "successful" student body under investigation than is customarily found in the general population—specifically, greater than 1%, which is nearly double the 0.6% found by Coid et al. (2009). Although the PPI-R does not provide a cutoff score (Lilienfeld & Widows, 2005), an assessment of the distribution of percentiles should provide an indication of whether the sample under study exhibits higher-than-normal levels of psychopathy. However, I expected in particular higher-than-typical scores on Factor 1 of the PPI-R, but not on Factor 2. This was based on several studies that suggest (a) primary psychopathy is strongly associated with Factor 1 of the PCL-R (Ross & Rausch, 2001), (b) Factor 1 of the PCL-R is moderately correlated with Factor 1 of the PPI-R (Benning et al., 2003), and (c) primary psychopathic traits have been found to be more adaptive than secondary psychopathic traits (Archer & Coyne, 2005; Coyne & Thomas, 2008; Ross & Rausch, 2001).

2. I also expected that individuals with higher total scores on the PPI-R would display less risk-aversion, with those who score higher on Factor 2 potentially showing more risk-aversion than those who score higher on Factor 1. A finding of overall low risk-aversion would be in line with the general constellation of psychopathic traits originally identified by Cleckley (1941), namely a lack of anxiety, dysfunctional experiential learning, poor behavioral inhibition, and a lack of foresight and planning. The difference according to factor would conform to Levenson et al.'s (1995) results on the difference in "trait anxiety" between primary and

secondary psychopaths. Schmitt et al. (1999) previously tested risk-aversion using a gambling task. This task involved selecting cards from "rigged" decks, one of which was "good" and one of which was "bad;" participants were scored according to how quickly they learned to select from the "good" deck. The authors found a correlation between risk-aversion and anxiety but not between risk-aversion and psychopathy. However, by its traditional definition in economics, Schmitt et al.'s (1999) gambling task was not truly measuring risk-aversion, but rather a form of experiential learning. Therefore, the current study tested risk-aversion according to its understanding in economics—that is, choosing a "sure thing" over a riskier option when both represent the same expected value (Binswanger, 1980).

3. I believed that individuals with higher scores on Factor 1 of the PPI-R would show a more positive attributional style (Peterson et al., 1982). A positive attributional style has been shown to protect individuals from experiencing depression (Sanjuan & Magallares, 2009); similarly, psychopaths generally show lower-than-average rates of depression (Lovelace & Gannon, 2006). However, given differences between primary and secondary psychopaths, such that primary psychopathy is associated with low rates of depression but secondary psychopathy is not (Vaughn et al., 2009), I expect Factor 1 of the PPI-R to correlate positively with a positive attributional style, but not Factor 2.

4. I expected participants who score high on Factor 1 of the PPI-R to judge cheaters more forgivingly. Mealey (1995, as cited in Ross & Rausch, 2001) "suggests that psychopaths are 'cheaters'—low in cooperation and high in competition." Ross and Rausch (2001) investigated this theory and proposed that secondary psychopaths are likely to be cheaters, whereas primary psychopaths are more likely to be 'warrior hawks' (Baily, 1995, as cited in Ross & Rausch, 2001). However, Coyne and Thomas (2008) found, to the contrary, that cheating behavior

predicted *primary* psychopathy, and not secondary psychopathy. Ross & Rausch (2001) may have misinterpreted the implications of the varying levels of cooperation and competitiveness that they found among different psychopaths. Thus, when assessing scenarios involving "fuzzy" cheating, participants who score high on Factor 1 of the PPI-R, but not those who score high on Factor 2, were expected to judge the actors in these scenarios less harshly.

5. Higher scores on the PPI-R, particularly higher scores on Factor 1, were predicted to correlate with a greater tendency toward certain "risky," "powerful," professions, and more political activity as an undergraduate. This was not to say that these individuals would possess ambitions to become heroes; as Levenson et al. (1995) point out, this may not be an accurate conception of the psychopath's risky, aggressive behavior. However, one could argue that high-power business executives, players on Wall Street, and nationally recognized politicians are all in "risky" professions; they are certainly in very active, powerful, charisma-driven professions. Given Board and Fritzon's (2005) and Babiak and Hare's (2006) surveys of psychopaths in the business world, as well as the accepted general constellation of psychopathic traits, I predicted that those who score especially high on the PPI-R, especially on Factor 1, would indicate an interest in pursuing professions that independent raters deem more likely to attract "narcissistic, manipulative, and power-hungry" personalities. I expected that they would also be more politically active on campus.

6. Higher scorers on the Factor 2 of the PPI-R were predicted to have had more disciplinary problems throughout their lives. Although the sample currently under investigation is necessarily non-criminal, this does not preclude the possibility of discovering an undercurrent of antisocial behavior among those who show more psychopathic tendencies. Given the differences in levels of success posited by several researchers previously (e.g., Coyne & Thomas,

2008; Ishikawa et al., 2001), high scores on Factor 2, but not Factor 1, were expected to correlate with discipline problems.

7. Finally, I believed that higher scores on Factor 1 of the PPI-R, but not on Factor 2, would correlate with less empathic concern, as measured by a donation choice. This result would support the findings of Board and Fritzon (2005), who discovered a significant prevalence of psychopathic personality traits among UK business executives, including narcissism, and Jakobwitz and Egan (2006), who showed a significant positive correlation between narcissism and primary psychopathy.

Method

Participants

Adult participants were recruited from an Ivy League university through a combination of flier advertisements and online sign-up. A slight majority of participants (22) received experimental research credit toward their introductory psychology course; the rest (20) were paid $5 for their time. All participants were assured that their answers remained anonymous—names were not collected except to verify payment—and all participants received a debriefing following completion of the study. In the process of recruitment, 2 non-Yale-affiliated persons signed up for and took part in the study; although they were paid for their time, their data are excluded in the analysis from here on—thus, N=40.

The total sample consisted of 18 men and 22 women. Participants ranged in age from 18-28 years old, with a mean of 19.48 (SD=2.03). The sample included 18 White, 8 Asian, 7 Black, and 7 other/mixed-race participants. For nationality, because of imbalanced groups and the small overall sample size, during analysis, participants were consolidated into two groups as American (32) and non-American (8), reducing self-reported specificity.

Measures

Psychopathy

The *Psychopathic Personality Inventory-Revised* (PPI-R; Lilienfeld & Widows, 2005) consists of 154 multiple-choice items (e.g., "It might be exciting to be on a plane that was about to crash but somehow landed safely"). Items are scored on a 4-point Likert scale ranging from False to True; half of the items are reverse scored. The scoring book produces raw scores and percentiles, broken down by factor: Factor 1 (PPI-I), sometimes labeled "Fearless Dominance," includes the subscales Social Influence, Fearlessness, and Stress Immunity; Factor 2 (PPI-II), sometimes labeled "Self-Centered Impulsivity," includes the subscales Machiavellian Egocentricity, Rebellious Nonconformity, Carefree Nonplanfulness, and Blame Externalization (Benning et al., 2003; Lilienfeld & Widows, 2005). "Coldheartedness" falls outside of the two main factors, and will be referred to as Factor 3. As noted above, PPI-I correlates "modestly" with Factor 1 of the PCL-R, and PPI-II correlates similarly with Factor 2 of the PCL-R (Benning et al., 2003). Because of well-established gender differences in the prevalence of psychopathy (Cale & Lilienfeld, 2002), and because the PPI-R percentiles have been calculated to account for this (Lilienfeld & Widows, 2005), percentiles will be used in place of raw scores throughout this analysis.

This test was administered with all identifying names (i.e., any instance of "PPI-R") on the test materials covered with white tape. This was to preserve the integrity of the measure against any biases should a participant have recognized the test. In addition, it maintained a level of discreteness with regard to the precise nature of the study—i.e., it may have caused undue psychological distress for participants to learn, even after the fact, that they were being (had been) tested for psychopathy, anonymity notwithstanding.

Potential Correlates

The *Attributional Style Questionnaire* (ASQ; Peterson et al., 1982) originally consisted of 12 hypothetical events, half positive (good) events and half negative (bad). Participants are asked to indicate what they feel would be a major cause of the event and then answer three questions. The relevant question for the current study asks whether the cause of the event is more due to something about the participant or external factors; participants answer on a 7-point Likert scale ranging from 1="Totally due to other people or circumstances" to 7="Totally due to me." For the purpose of timeliness, six events were selected for use in the current study, three positive and three negative. The scores on the three positive and three negative items were summed separately, and then the negative sum subtracted from the positive sum in order to produce a continuous scale with values representing the degree to which the participant possesses a positive attributional style.

The *Cheating Scenarios Survey* (CSS; Lockhart, ongoing) consists of five scenarios involving a person—with a gender-neutral name—committing a form of "fuzzy" cheating (e.g., Jesse, 35, while grocery shopping, accidentally overhears insider stock information that he/she then uses to gain $25,000). Participants answered six questions about each scenario. Four of these questions, each on a 1-5 Likert scale, were summed, and the sums from each scenario combined to calculate an average for the entire CSS for each participant. Higher scores represent harsher judgments of the actors in the scenarios; lower scores represent more forgiving judgments. (For an example scenario and corresponding questions, see Appendix.)

The *Card Game* (CG) consists of ten trials in which the participant must choose between a set of three lotteries. The game was modeled after the paradigm used by Binswanger (1980) to measure risk-aversion. The lotteries are represented by "payouts" from a forced choice between

three standard decks of cards. For each trial, each deck is paired with a different "payout" according to whether the card selected at random from the deck is either red or black (e.g., in Trial 8, a black card from Deck A results in 8 points lost, and a red card results in 17 points gained; these numbers are different from the other decks in Trial 8, and all of the decks' payouts change in each new trial). Each deck in each trial is classified as *risk-averse* (RA), *risk-seeking* (RS), or *optimal* (O). An O choice is any whose expected value is greater than that of both other decks. A RA choice is any whose expected value is less than some O choice, and also definite (e.g., both a red and black card result in the same amount gained or lost). A RS choice is any whose expected value is less than some O choice, and also which contains the possibility of a greater payout (e.g., the expected values may be +4 and +3.5 for the O and RS choices, respectively, but the maximum payout from the O choice is +4, whereas the maximum payout for the RS choice is +12—this is the scenario in Trial 2). In addition, a choice may be both O and either RA or RS. All trials that contain a choice that is O/RA also contain one that is O/RS. The choices are scored as follows: RS = -2, O/RS = -1, O = 0, O/RA = +1, RA = +2. Thus, positive total scores represent risk-aversion, and negative scores represent risk-seeking, or risk-acceptance. (For the full script read to participants before this task, see Appendix.)

The *Biographical/Academic Characteristics Survey* (BACS) consists of 12 items designed to measure several distinct variables: socioeconomic status through high school; political activity during undergrad; party ID; undergraduate GPA; time spent working during undergrad; time spent volunteering during undergrad; disciplinary trouble throughout school; and parental marital status (i.e. divorced or not). These items are all either multiple choice or 1-5 or 1-7 Likert scales.

Participants also indicated their expected career paths. Independent raters scored these, as well as majors, on a 1-7 point Likert scale measuring to what extent each attracted people with "narcissistic, manipulative, and/or power-hungry personalities." Males rated career paths and majors for males—i.e., they were instructed to indicate how much these careers and majors attract *males* with these characteristics—and females for females. Three of each gender rated the careers and majors, and their scores were totaled, rather than averaged, to produce a wider range to accommodate the number of options. Tables 1 and 2 report the scores for all careers and majors used in the study.

Table 1
Psychopathy of majors

	Males	Females
History	11	8
Psychology	8	7
Economics	16	18
English	11	6
Chemistry	8	8
Architecture	13	14
Theatre Studies	9	15
Biology	10	14
Polital Science	15	14
Religious Studies	10	10
Astronomy/Astrophysics	5	7
Philosophy	8	15
Sociology	8	11
Computer Science	7	11

Table 2
Psychopathy of careers

	Males	Females
Law	16	16
Business	18	20
Arts & Entertainment	13	20
Academia	8	15
Teaching	6	7
Professional Sports	15	19
Politics	19	20
Tech Science	8	5
Medicine	12	16

Note. Scores for majors and careers could range from 3-21.

The *Donation Choice* (DC) consists of a simple choice between donating to a local soup kitchen or the university's Alumni Fund (specifically allocated for "Undergraduate Life"). Participants were asked to check the box below their choice on a small slip of paper and then place the paper and a dollar bill ("won" from the card game) in an unmarked envelope to ensure anonymity. This was designed to measure empathy, the soup kitchen representing the "empathic" choice, Undergraduate Life representing the "selfish" choice.

Procedure

Participants, upon signing the consent form, completed, in order, (i) the BACS, (ii) an abbreviated form of the ASQ, (iii) the CSS, (iv) the PPI-R, (v) the CG, and (vi) the DC. They were then debriefed and received either experimental research credit or $5 for their participation.

Results

Table 3 reports the means and standard deviations for the primary variables under investigation. Although the small N reduced the ability to statistically assess the distribution, a simple examination of the data revealed several extreme results. 59% of the females in the sample (13/22) scored in the 60th percentile or above on Fearless Dominance (PPI-I). 45% of females (10/22) scored in the 69th percentile or above on the PPI-R overall. Conversely, 56% of the males (10/18) scored in the 30th percentile or below on Fearless Dominance, with 28% scoring in the 9th percentile or below. 61% of males scored in the 39th percentile or below on the PPI-R overall. Overall, the highest raw score was 342, a female, which was 66 points higher than the standard female mean (Lilienfeld & Widows 2005), and in the 98th percentile. The PPI-II and PPI-III distributions were less skewed than those of the PPI-I and PPI-R total. Figures 1 and 2 display the histograms for PPI-R total percentiles for males and females, respectively.

Figure 1
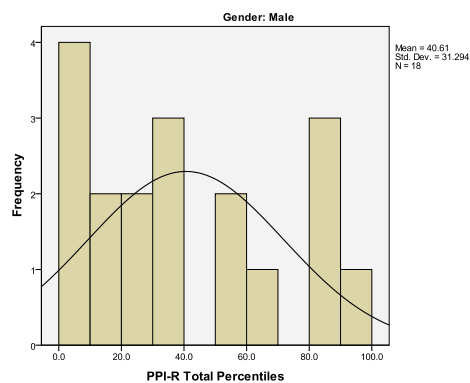PPI-R Total percentile frequencies for males

Figure 2
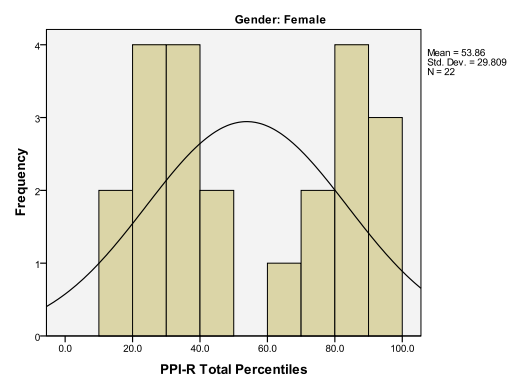PPI-R Total percentile frequencies for females

Table 3
Descriptive statistics of the primary variables under study

	Males		Females	
	Mean	SD	Mean	SD
Political Activity	2.61	1.29	2.18	1.10
GPA	3.51	0.35	3.50	0.28
Time Employed	3.83	2.41	2.00	1.93
Time Volunteering	3.11	1.75	4.45	2.06
Total Trouble	5.28	1.93	4.64	1.92
Psychopathy of Career Path	13.47	2.87	15.77	3.77
Psychopathy of Major	10.79	3.93	11.12	4.24
ASQ Self-Causation	26.22	3.70	25.77	4.24
ASQ Overall Positive	1.44	4.31	2.05	4.06
Cheating Judgments	13.44	2.31	13.13	1.89
Risk-Aversion	-4.17	3.71	-3.50	3.84
PPI-I Percentile	35.39	26.66	57.86	21.93
PPI-II Percentile	53.24	29.83	55.19	28.81
PPI-III Percentile	45.83	27.28	51.27	27.14
PPI-Total Percentile	40.61	31.29	53.86	29.81

Note. Political Activity = self-reported political activity as an undergraduate; GPA = grade point average as an undergraduate; Time Employed = amount of time employed as an undergraduate; Time Volunteering = amount of time participating in a volunteer position as an undergraduate; Total Trouble = cumulative amount of disciplinary problems from elementary school through college; Psychopathy of Career Path = degree to which reported career plans were rated as psychopathic by independent raters; ASQ Self-Causation = degree of perceived self-causation on all events (positive and negative) on the ASQ; ASQ Overall Positive = degree of positive Attributional style; Cheating Judgments = harshness of judgments of cheaters; Risk-Aversion = degree of risk-aversion in a lottery choice task.

An ANOVA was performed to look for any gender differences on the target variables. This revealed significant differences on Time Employed ($p < 0.05$), Time Volunteering ($p < 0.05$), and Psychopathy of Career ($p < 0.05$). Of these, only Psychopathy of Career correlated significantly with a PPI-R Factor (See Table 4). Notably, despite the fact that gender has been identified as a significant mediator of psychopathy (Cale & Lilienfeld, 2002), the current study found no significant gender differences on the PPI-R except on PPI-I percentiles ($p < 0.01$), shown in Figure 3; perhaps more surprisingly, there were also no significant gender differences found on PPI-R raw scores.

Figure 3
PPI-I percentile means
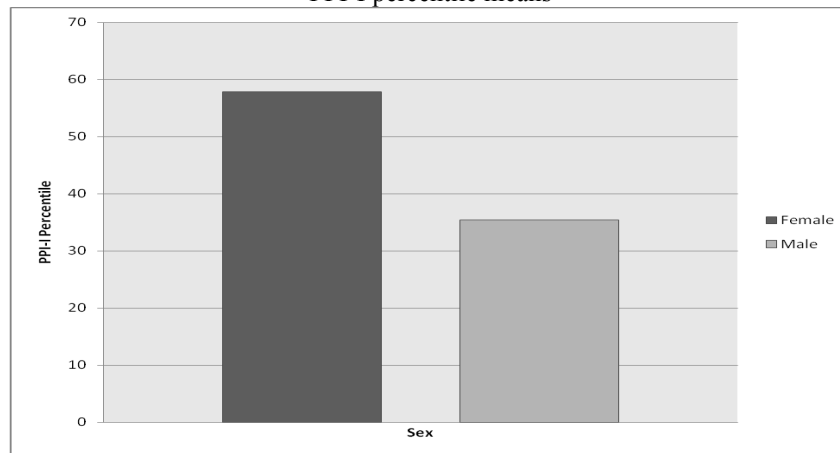
In answering the specific hypotheses under study, several significant correlations were found between PPI-R Factors 1 and 2 and other variables; however, the magnitude of the individual correlations varied greatly. Table 4 presents correlations for all PPI-R factor percentiles and the PPI-R Total percentiles. The variables GPA, Time Employed, Time Volunteering, Household Income, Psychopathy of Major, ASQ- (degree of self-causation of negative events on the ASQ) and ASQself (degree of self-causation on ASQ overall) were all dropped from Table 4, as their correlations with the PPI-R did not reach statistical significance.

Table 4
Significant correlations between PPI-R percentiles (%) and other variables used in the study

	PPI-II %	PPI-III %	PPI Total %	Age	Political Activity	Total Trouble	Career Path	ASQ+	ASQ Overall	Cheat (A4)	Risk-Aversion
PPI-I %	.247	.435**	.694**	-.361*	.358*	.085	.341*	.482**	.487**	-.394*	.092
PPI-II %		.306	.829**	.021	-.075	.504**	-.025	-.077	-.144	-.127	-.328*
PPI-III %			.566**	.054	.284	.338*	.083	.312*	.142	-.175	-.016
PPI Total %				-.125	.172	.448**	.112	.228	.196	-.293	-.191

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Out of the sample of 40 participants, only two chose to donate to the university's Alumni Fund; the rest donated to the local soup kitchen. Because of these imbalanced group sizes, caution should be used when interpreting their results. Nonetheless, ANOVA revealed significant mean differences between the two donation groups on PPI-III, with high PPI-III percentiles predicting donation to the Alumni Fund (F = 5.928, p = 0.02).

Given the significant gender difference found on Factor 1 percentiles, it was suspected that gender may have exerted a mediation effect on some of the correlations shown in Table 4. Table 5 presents correlations for males and females for which gender produced noticeably different results – Age, GPA, Cheating, and the PPI-R factors and total score are excluded from the table, as the gender differences on these variables were negligible.

Table 5
Gender differences on correlations between PPI-R and other variables used in the study

	Psychopathy of Major	Household Income	Political Activity	Time Employed	Time Volunteered	Total Trouble	Career Path	ASQ+	ASQ-	ASQ Self-Cause	ASQ Overall	Risk-Aversion
PPI%1	.674**	.001	.656**	.019	.010	.343	.359	.425	-.524*	-.110	.627**	-.107
	(-.310)[a]	(.345)	(.298)	(-.021)	(.245)	(.012)	(.172)	(.637**)	(.124)	(.530*)	(.381)	(.220)
PPI%2	.145	-.015	.169	.509*	-.135	.578*	.088	-.226	-.021	-.183	-.127	-.527*
	(-.112)	(-.166)	(-.304)	(-.057)	(-.088)	(.467*)	(-.103)	(.035)	(.268)	(.178)	(-.164)	(-.176)
PPI%3	.513	.373	.533*	-.052	-.144	.323	.522*	.122	-.110	.001	.153	-.106
	(-.345)	(-.225)	(.096)	(-.047)	(-.210)	(.394)	(-.217)	(.454*)	(.301)	(.521*)	(.121)	(.038)
PPI% Total	.552*	.047	.529*	.347	-.115	.617**	.270	.051	-.354	-.247	.275	-.392
	(-.216)	(-.087)	(-.088)	(-.054)	(-.010)	(.406)	(-.073)	(.373)	(.241)	(.405)	(.104)	(-.071)

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
[a] Results are arranged: Male (Female)
Note. ASQ+ = the participant's degree of perceived self-causation for positive events; ASQ- = the participant's degree of perceived self-causation for negative events; in each cell, male correlations are shown, with female correlations below in parentheses.

In order to assess the overall power of the target variables to predict each factor of psychopathy and psychopathy in general, a multiple regression analysis was used. This included all of the variables examined and obtained their joint R^2 values for PPI-I (R^2 = .87, p = .002), PPI-II (R^2 = .71, p = .19), PPI-III (R^2 = .74, p = .06), and PPI Total (R^2 = .70, p = .13). As would

be expected given the correlations shown in Tables 2 and 3, PPI-I was the best-predicted factor by the variables under study. Overall, the variables predicted slightly over two-thirds of the variance in PPI-R Total percentiles.

Discussion

The current study sought to investigate the "successful" psychopathy concept by identifying adaptive traits associated with higher rates of psychopathy in a self-evidently successful population. Most of the variables used in the study correlated with at least one factor of the PPI-R, and collectively, they accounted for the majority of the variance in PPI-R scores and percentiles. However, gender was found to mediate many of these correlations. Implications of this gender effect are addressed below, followed by a discussion of the specific hypotheses under investigation.

Gender differences in psychopathy

As Table 5 shows, gender was found to mediate many of the correlations between PPI-R percentiles and the other variables used in the study. Historically, both psychopathy and ASPD have been more prevalent and severe in males than in females (Cale & Lilienfeld, 2002). The correlations found in the current study, however, suggest that the gender distinction extends beyond differences in severity. For instance, PPI-I was found to correlate significantly with political activity on campus. This correlation was much stronger, though, for males (.656, $p <$ 0.01) than for females (.298, $p > 0.05$). Many other variables exhibited similar gender differences when correlated with the PPI-R factor and total percentiles. This implies that psychopathy may actually manifest itself differently in males and females—e.g. a Fearless Dominant (PPI-I) attitude may lead males, but not females, to attribute negative events to

external factors (ASQ-; male $r = -.524$, female $r = .124$). Much of this may be attributable to differences in socialization; further research will be necessary to better understand the interaction between gender and psychopathy.

Psychopathy in a "successful" population

The central hypotheses, that there would be a greater prevalence of psychopathic traits in the population under study, and that in particular, there would be higher-than-normal PPI-I scores, were not supported. The lack of any "full-blown" psychopaths is perhaps unremarkable given the small N. Furthermore, the creators of the PPI-R deliberately refrained from identifying cutoffs for diagnosing psychopaths; instead, they subscribe to the conception of psychopathy as a spectrum of traits that everyone possesses to varying degrees (Lilienfeld & Widows, 2005). Thus, by definition, the current study *couldn't* definitively find a full psychopath. Still, there was also no significant overall elevation in mean scores from the other community samples (Lilienfeld & Widows, 2005). This is perhaps especially surprising given Jakobwitz and Egan's (2006) finding of an increase in mean MACH-IV scores from past studies. Those authors suggest that this increase reflects greater societal emphasis on competition and materialism, which promotes certain psychopathic traits as effective tools for success. If that were true, then one might expect to see an especially marked increase in psychopathy scores in exactly the type of population currently under study, yet this was not the case. Further research on the relationship between machiavellianism and psychopathy and the adaptiveness of each construct will be useful in understanding these results.

Although the current study found no evidence of elevated levels of psychopathy overall, there was an unexpected difference in mean raw scores between the current sample and the community/college sample used in the standardization of the PPI-R. Figure 3 shows a

comparison between the mean raw scores of the two samples separated by gender. The mean male scores of the current sample were about 13 points lower, whereas the mean female scores were about 4 points higher; these results further reflect the skewed distributions of percentiles mentioned above. Certainly, the small sample size in the current study should inspire caution in making comparisons across samples and interpreting the distributions. Yet, it is noteworthy that the mean scores for both genders are not only different from the standard sample, but they are different in opposite directions, reducing the disparity in male and female means. As Table 7 indicates, most of the total mean differences are explained by PPI-I.

In addition, the current sample included several extreme scores—three females and one male in the 90th percentile or above, and one female and four males scored in the 10th percentile or below. Moreover, as Figures 1 and 2 show above, the male sample was skewed toward low scores, while the female sample was skewed toward both extremes. Again, interpretation is limited by the small N; but unless there is reason to suspect that the current sample is unrepresentative of the university from which it comes, the distributions may be viewed as indicative of an atypical population.

Figure 3
Comparison of PPI-R raw scores across samples
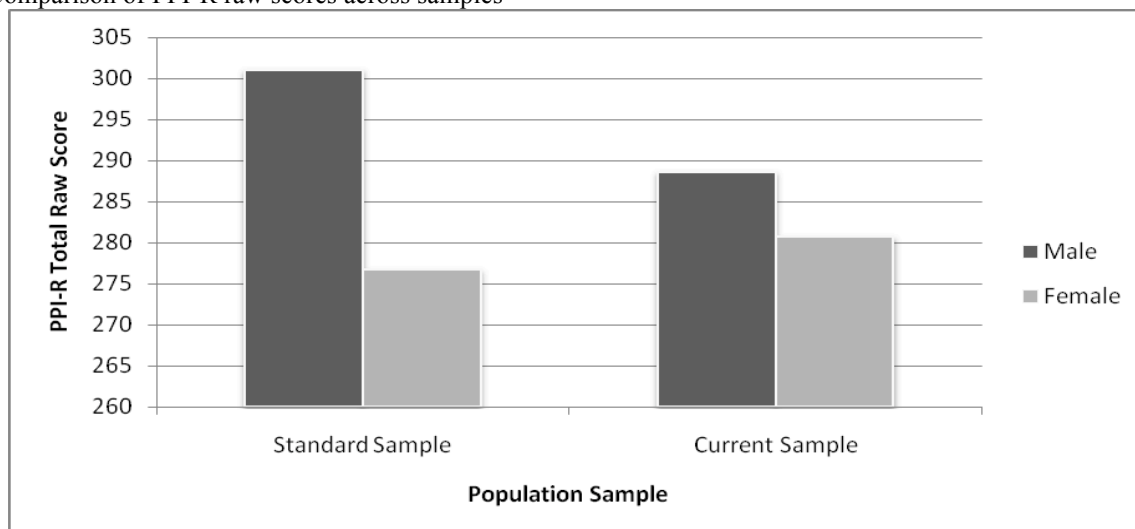
There are several potential explanations for these results. Cale and Lilienfeld (2002) note the considerable gender differences in rates of both psychopathy and ASPD among both prison and community populations. Historically, these gender differences have meant significantly higher scores for males. The present study may suggest the beginning of a shift in these differences; perhaps the increase in MACH-IV scores found by Jakobwitz and Egan (2006) actually reflect increasing *female* primary psychopathy. Indeed, this may be a reasonable expectation given the rise in female social mobility in recent decades and the increasing prevalence of women in positions of power. Alternatively, the results may reflect something particular to the current sample; the university's admissions office may be selecting for more aggressive, individualistic female leaders while simultaneously deemphasizing the importance of these traits in males. This could occur either through a deliberate shift in the school's philosophy or a subconscious gender bias in admissions in response to societal pressure to admit more-ambitious females to college. A similar comparison of raw scores among different university samples could verify or disconfirm the existence of this bias. Additionally, the non-normal distributions of PPI-R total percentiles may suggest not that some psychopathic traits are simply adaptive, but that it is adaptive to be on one of the extremes, possessing either significantly psychopathic traits or almost none at all. Repetition with a larger sample may help provide further explanation.

Table 7

Comparison of PPI-I and PPI-II raw scores across samples

	PPI-I		PPI-II	
	Standard Sample	Current Sample	Standard Sample	Current Sample
Male	122.44	112.65	145.53	142.59
Female	111.31	113.95	136.07	135.91

Psychopathy and risk-aversion

Levenson et al. (1995) found "trait anxiety," or "stress reaction," to be very positively correlated with secondary psychopathy but only slightly positively correlated with primary psychopathy. They discuss how this is counter to Gray's (1987, as cited in Levenson et al., 1995) theory of the behavioral inhibition system controlling anxiety, as disinhibition was strongly correlated with both primary and secondary psychopathy. Newman et al. (2005) further investigated this distinction between psychopaths according to anxiety and found evidence that primary psychopathy "is characterized by a weak BIS (behavioral inhibition system) and a normal BAS (behavioral activation system)." The study also found support for an association between secondary psychopathy and a hyperactive BAS and limited support for an association between secondary psychopathy and a normal BIS.

In the current study, counter to the hypothesis that participants scoring higher on Factor 2 of the PPI-R would show more risk-aversion than those who score high on Factor 1, the opposite was true; a significant *negative* correlation was found between high scores on PPI-II (as measured by percentiles) and risk-aversion ($p < 0.05$), whereas PPI-I was uncorrelated with risk-aversion. This may suggest that risk-aversion is more dependent on the BAS than the BIS; thus, the hyperactive BAS of secondary psychopaths causes risk-seeking behavior, while the weak BIS of primary psychopaths exerts little effect on risk-taking either way. On the other hand, it may be inappropriate to compare across studies. Newman et al. (2005) use "self-report indices of BIS and BAS functioning," whereas the current study employed a behavioral task designed to measure risk-aversion in the economic sense of the construct. Either way, our results cast doubt on the relationship between risk-aversion and behavioral inhibition and trait anxiety.

On a more speculative note, Kashdan et al. (2009) report finding an unusual subset of people with social anxiety disorder who experience "high anger and aggression, and moderate/high sexual impulsivity and substance use problems." Although psychopathy does not come up in their discussion, this atypical group seems to match the profile of secondary psychopaths; their risk-proneness supports the current findings and secondary psychopaths' combination of trait anxiety and disinhibited antisocial behavior.

Finally, the measure of risk-aversion was limited in its generalizability to real-world behavior. Originally, the card game was meant to provide participants with the chance to "win" money for themselves. However, due to IRB constraints, participants from the introductory psychology pool could not be paid, necessitating the adaptation of the forced-donation procedure. This may have influenced participants' choices. Replication with a fully paid sample would help confirm the relationship between psychopathy and risk-acceptant behavior.

Psychopathy and attributional style

A positive attributional style as measured by a shortened version of the ASQ was significantly positively correlated with PPI-I ($p < 0.01$); as predicted, PPI-II was not significantly correlated with the a positive attributional style. Given Sanjuan and Magallares' (2009) study showing reduced susceptibility to depression for people with positive attributional styles, this finding supports previous research demonstrating that primary psychopathy, but not secondary psychopathy, is associated with lower levels of depression (Vaugn et al., 2009). In addition, this is a definitive instance of psychopathy being associated with an adaptive personality trait. Further research should investigate this association to determine precisely what other psychopathic traits may relate to attributional style and how psychopaths may apply this trait in social interactions.

Psychopathy and cheating

Just as Coyne and Thomas (2008) identified cheating behavior as a strong predictor of primary psychopathy but not secondary psychopathy, the current study found a significant negative correlation between PPI-I and condemning judgments of *others* cheating. In other words, these results support the notion that primary psychopaths not only cheat themselves, but they believe cheating behavior in general is not "wrong" or "harmful," and they choose not to punish cheaters as harshly as most people do. This highlights an important logical consistency in psychopaths' reasoning about cheating, in that their own actions conform to their more abstract moral beliefs about a particular deviant behavior (i.e., they don't hold others to a different standard from themselves); this is further support for Cleckley's (1941) notion of the psychopath as a fully rational actor. Moreover, this is another instance of an association between a potentially adaptive trait and psychopathy. Indeed, cheating, if performed successfully, will help people get ahead. The psychopath who is willing to cheat, then, holds a competitive edge against his or her peers, whether in crime, business, sports, or academics.

Psychopathy and career path

Previous research has found evidence for the presence of both psychopathic traits (Board & Fritzon, 2005) and full-blown psychopaths (Babiak & Hare, 2006) in the business world. The current study found further support that certain professions not only contain but *attract* psychopaths by offering power, intense activity, an opportunity to employ interpersonal skills (e.g. manipulativeness), and great potential for personal advancement and payoffs. After independent raters scored a list of nine career paths, participants' selections from these were correlated with their scores on the PPI-R, and a significant positive correlation was found between PPI-I percentiles and Psychopathy of Career. The raters considered professions

according to how likely they are to attract "narcissistic, aggressive, and/or power-hungry personalities" (see Appendix for full scaling measure). In addition, a significant positive correlation was found between both PPI-I percentiles and Political Activity as an undergraduate ($p < 0.03$); when raw score was used instead of percentile, the correlation was even stronger ($p = 0.003$.

With anecdotal evidence and engaging storytelling, Babiak and Hare (2006) describe in detail the process of a psychopath manipulating a community, exploiting its weaknesses and avoiding confrontations with potential adversaries, in order to gain power and money. They focus on psychopaths in the business world who move up in the ranks, gaining influence and resources as they go, until someone catches wind of their true nature, at which point they "bail." Of course, this phenomenon is undoubtedly more dangerous and worthy of concern in certain professional arenas. Unfortunately, the current study's results suggest that psychopaths are drawn to those careers in particular: business, law, and politics, to name a few. However, while this is potentially very damaging to society, it is arguably another example of an adaptive psychopathic trait. Business offers opportunity for profit; law and politics offer the chance to control and manipulate others, and sometimes to make decisions that affect hundreds, thousands, or even millions of people. Normative judgments aside, this is certainly further evidence for the existence of the "successful" psychopath.

Psychopathy and antisocial behavior

Historically, psychopathy has been strongly associated with criminality and antisociality in general (Walsh & Kosson, 2006). The current study found evidence that this association holds for community samples, even in markedly "successful" populations. Indeed, prevalence of self-reported disciplinary problems was the strongest predictor of higher raw scores and percentiles

on PPI-II (R^2 = 0.234 and 0.254, respectively). The large majority of students at the university from which this sample was drawn, and by extension the large majority of students in this sample, will likely go on to prominent positions in society. Further research would be useful in determining whether high PPI-II scores and/or significant past disciplinary problems provide an indicator of which students, if any, will fail to achieve such successful statuses. This would be a step toward distinguishing instrumentally maladaptive traits from the rest of the characteristics of psychopathy.

Psychopathy and empathy

As mentioned above, it is difficult to draw conclusions from the results of participants' donation choice. Overall, the prediction that PPI-I (and not PPI-II) would be negatively correlated with an empathic choice was not supported. Instead, PPI-III was the best predictor of a person's donation. Because of the focus on the two major factors of psychopathy within the literature, Factor 3 of the PPI-R did not figure into the hypotheses of the current study. However, Lilienfeld and Widows (2005) describe it as "an absence of tender social emotions and a callous failure to sympathize with others' suffering." By this definition, and considering the name of the factor—Coldheartedness—it seems almost redundant to say that the participants who chose not to donate to the soup kitchen scored high on PPI-III.

Interestingly, the PPI-I raw scores showed a much more significant between-group difference than PPI-I percentiles. This may be explained by the fact that the two participants who donated to the Alumni Fund were both male; the discrepancy makes some sense, then, in light of the strong interaction between PPI-I percentiles and gender. This also renders a comparison between factors 1 and 2 somewhat difficult to make. It is worth noting in addition, however, that the correlation between PPI-I and PPI-III percentiles was stronger than that

between PPI-II and PPI-III percentiles. This may indirectly support the study's hypothesis; replication with a larger sample size could provide more definitive results.

Finally, it is worth noting that constraints imposed by the Human Subjects Committee due to the nature of the sample—introductory psychology students participating for credit— limited the scope of this measure. Instead of providing two donation choices, the original conception was to provide a choice between donating to the soup kitchen—the empathic choice—and keeping the money—the selfish choice. Because both options instead involved donations, the "better" choice may have seemed more obvious that it should have (i.e. if you have to give the money away no matter what, you may as well give it to feed the poor). Indeed, a donation to the Alumni Fund may not have elicited feelings of personal gain, as it was intended to. Replication of this study with a fully paid sample, so that the original paradigm can be used, might provide more insight on empathy's relationship to psychopathy and the other traits in question.

Conclusion

When interpreting the results of this study, one must keep in mind the limited sample size, as well as the unique characteristics of the sample. Both of these restrict the generalizability of the findings. On the other hand, this particular sample's privileged and elite status provided an excellent opportunity to investigate "successful" psychopathy, as the participants come from a population that is successful almost by definition. One way the sample's uniqueness may have shown itself in the results is in gender differences. The uncharacteristically small difference between male and female mean raw scores may indicate a distinctive feature of the current sample. Alternatively, it may signal a contemporary shift in the

manifestation of psychopathy in females as compared to males. Additional research will be necessary to better interpret these results.

Very recently, some research has cast doubt on the strength of the relationship between PPI-I and Factor 1 of the PCL-R (Malterer et al., 2010). Although there remains a distinct association between the PPI-R and PCL-R, the prevalence of research questioning its strength should prompt researchers to seek both a firmer conceptualization of the differences between primary and secondary psychopathy, and a better understanding of how they map onto the different factors of the many measures of psychopathy, including the PPI-R and PCL-R. Yet, this does not detract from the current study's findings. Even without a perfect match between PPI-I and Factor 1 of the PCL-R, and by extension primary psychopathy, PPI-I clearly correlated with several traits that would be adaptive in certain situations.

One explanation for these results is that all traits associated with psychopathy are on a spectrum, and they are only adaptive at pre-psychopathic levels. For instance, a positive attributional style—arguably an adaptive trait, as it augments self-esteem and confidence and protects against depression (Sanjuan & Magallares, 2009)—correlated positively with PPI-I percentiles. However, it may be that *more* psychopathic people would possess *such* a positive attributional style that it would become maladaptive; indeed, perhaps this would explain why the current study failed to find any "full-blown" psychopaths, as the population under study was biased toward life success. Yet, this criticism is somewhat tautological; one could argue that any trait in very extreme amounts will be maladaptive. It is unclear how this could be addressed empirically, although it would be informative to explore the adaptive traits from the current study in a population of criminal psychopaths. Nonetheless, the current results remain useful in assessing varied levels of psychopathy in a non-criminal sample.

Thus, the findings of the current study provide evidence for the existence of adaptive psychopathic traits contributing to people's life success. Although not every hypothesis found support, there were many significant correlations between the factors of the PPI-R and arguably adaptive traits. In particular, political activity, narcissistic and ambitious career choices, positive Attributional style, and forgiving judgments of cheaters seem to predict high scores on PPI-I, the "Fearless Dominance" scale. Disciplinary problems and a lack of risk-aversion correlated with PPI-II, the "Impulsive Antisociality" scale. These results support the claim that PPI-I is associated with potentially adaptive traits, whereas PPI-II may not be. Further research should therefore seek to further clarify and add to the specific traits associated with each factor and identify precisely which psychopathic characteristics may prove to be adaptive in application.

Collectively, the traits associated with PPI-I in this study create the image of psychopaths who interpret positive events as self-caused and negative events as externally-caused. These psychopaths take no issue with cheating behavior, and they seek out high-power, personally rewarding careers, beginning early in college by participating in on-campus political activities. In the future, these people would assume the roles of leading politicians and business executives. Babiak and Hare (2006), focusing on the business world, highlight the importance of being on the lookout for these personalities and being aware of the potential damage they could cause to society. However, given the highly selective, even elite nature of the sample currently under study, this is clearly easier said than done. For a first step, as a society, perhaps we must reconsider our prioritization of values, weighing confidence and ambition against empathy and humility, and considering all of the ancillary traits associated with these. In other words, we must decide which traits we value; and we must acknowledge the fact that some personality characteristics that currently lend a competitive edge, indirectly promoted by an increasing

emphasis on competition throughout society, are associated with psychopathy, an enigmatic

construct that further research should seek to better understand.

Appendix

Document A: Cheating Scenario Example

Jesse, 35, is in the checkout line to buy groceries one day when s/he overhears the couple in front of him/her discussing the future of a large technology company.   In this conversation, Jesse learns that the man is very high up in the company, and s/he hears the man tell his wife of a major upcoming transaction that should net the technology company enormous profits and raise its stock significantly. The next day, Jesse buys some of the company's stock, and within three months of his/her purchase has profited over $25,000.

How much was Jesse's action harmful to others?

1	**2**	**3**	**4**	**5**
Not at all	A little bit	A medium amount	Quite a bit	A lot

How wrong was it for Jesse to buy the stock?

1	**2**	**3**	**4**	**5**
Not at all	A little bit	A medium amount	Quite a bit	A lot

Did Jesse "cheat?" (circle one)

Yes   No

If you answered "yes," how much did Jesse cheat?

1	**2**	**3**	**4**	**5**
Not at all	A little bit	A medium amount	Quite a bit	A lot

If you were judging the moral content of this, how much would you punish Jesse?

1	**2**	**3**	**4**	**5**
Not at all	A little bit	A medium amount	Quite a bit	A lot

A year later, Jesse is playing a game of cards that involves acting strategically based on what cards you believe your opponent has. At one point, the person with whom Jesse is playing gets up from the table to go to the bathroom. How likely do you think it is that Jesse will peak at his/her opponent's cards while they are in the bathroom?

1	**2**	**3**	**4**	**5**
Not at all likely	A little likely	Likely	Very likely	Almost certain

Document B: Card Game Script

In front of you on the table there are three standard decks of cards, each 52 cards, 26 red and 26 black. The leftmost deck will be Deck A, the middle deck will be Deck B, and the rightmost Deck C. This will remain constant for the duration of the game; the game will last for 10 trials.

In each trial, I will place a sheet of paper down behind the cards denoting the payouts for each deck. For instance, above Deck A, it may say that a red card = -10 and a black card = +10. This means that if you elect to take a card from Deck A for that trial, and the card is red, you lose 10 points; if the card is black, you win 10 points. During each trial, each deck will have different payouts from the other decks, and for each new trial, all of the payouts will change.

Before the tenth and final trial, I will tell you how many points you have so far. Then, for this trial, Deck C will operate differently. Decks A and B will still have ordinary payouts. However, Deck C will function as a double-or-nothing option: a black card from Deck C will double your total, and a red card will change it to zero. This is the case whether your current total is positive or negative – a black card will make it doubly positive or doubly negative, and a red card will bring it up or down to zero.

Your final total will determine how much money you win, which you may then donate to a charity.

Document C: Scaling Measure for Psychopathy of Major and Psychopathy of Career (men rated them for men, women for women)

Please rate these **majors** on a scale of 1-7 according to how much you think they each attract **men** with narcissistic, manipulative, and/or power-hungry personalities, 7 being the most attractive to these personalities, 1 people the least.

__ History   __ Psychology   __ Economics   __ English

__ Chemistry   __ Architecture   __ MCDB   __ Theatre Studies

__ Biology   __ Political Science   __ Religious Studies

__ Astronomy/Astrophysics   __ Philosophy   __ Sociology

__ Computer Science

Please rank these **career paths** on a scale of 1-7 according to how much you think they each attract **men** with narcissistic, aggressive, and/or power-hungry personalities, 7 being the most attractive to these personalities, 1 people the least.

__ Law   __ Business   __ Arts & Entertainment   __ Academia

__ Teaching   __ Pro sports   __ Politics   __ Tech science   __ Medicine

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