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Assessment of Fearless Dominance and Impulsive Antisociality via Normal Personality Measures: Convergent Validity, Criterion Validity, and Developmental Change

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Abstract

This report provides evidence for the reliability, validity, and developmental course of the psychopathic personality traits of Fearless Dominance (FD) and Impulsive Antisociality (IA) as assessed by items from Multidimensional Personality Questionnaire (MPQ; Patrick, Curtin, & Tellegen, 2002). In Study 1, MPQ-based measures of FD and IA were strongly correlated with their corresponding composite scores from the Psychopathic Personality Inventory-Revised (Lilienfeld & Widows, 2005). In Study 2, FD and IA had relatively distinct associations with measures of normal and maladaptive personality traits. In Study 3, FD and IA had substantial retest coefficients during the transition to adulthood and both traits showed average declines with an especially substantial drop in IA. In Study 4, FD and IA were correlated with measures of internalizing and externalizing problems in ways consistent with previous research and theory. Collectively, these results provide important information about the assessment of FD and IA.

Cleckley's (1941) *The Mask of Sanity* contains rich descriptions of the personalities of psychopaths. The challenge facing personality researchers is to translate these clinical impressions into valid and reliable assessment tools that can be used with a variety of populations. The objective of this paper is to evaluate how well items from a commonly used self-report measure of normal personality, the Multidimensional Personality Questionnaire (MPQ; Patrick, Curtin, & Tellegen, 2002) can assess psychopathic personality traits following work by Blonigen, Hicks, Krueger, Patrick, and Iacono (2006; see also Benning, Patrick, Hicks, & Iacono, 2005). In this report, we show how the MPQ-based measures correlate with the two higher-order scale composites from the Psychopathic Personality Inventory-Revised (Lilienfeld & Widows, 2005) and provide further evidence of how these constructs are related to existing self-report measures of psychopathy. We also examine how the MPQ-based

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measures of psychopathic traits are related to the individual difference constructs that are routinely used in the normal and abnormal personality literatures. Finally, we replicate the Blonigen et al. (2006) findings regarding the development of psychopathic traits during the transition to adulthood and provide additional criterion-related data on the MPQ-based measures from a community sample. Collectively, these studies provide valuable information about the assessment and development of psychopathic personality characteristics in non-incarcerated samples.

Although it may initially seem counter-intuitive, research on college student and community samples may be useful for advancing the scientific understanding of psychopathy (see also Levenson, Kiehl, & Fitzpatrick, 1995; Lilienfeld & Andrews, 1996). First, despite the fact that traditional conceptualizations of psychopathy tend to treat it as a dichotomous disorder – individuals are psychopathic or not – recent research fails to support a categorical distinction between psychopaths and non-psychopaths (Edens, Marcus, Lilienfeld, & Poythress, 2006; Marcus, John, & Edens, 2004; Murrie, Marcus, Douglas, Lee, Salekin, & Vincent, 2007). The literature instead supports a dimensional representation of psychopathy that involves a collection of attributes that each exist on a continuum. Thus, it may be possible to study psychopathic personality traits in a wide variety of samples including college and community samples. Second, such samples are likely to contain individuals with elevated levels of psychopathic personality traits who have not been incarcerated. In classic discussions (e.g., Widom, 1977) these individuals are considered "successful psychopaths." The examination of psychopathic personality traits in normal populations (i.e., epidemiological and community samples) may help delineate factors that protect against involvement with problem behavior (Lilienfeld 1994; Hall & Benning, 2006). Finally, it is efficient in terms of time and money to conduct controlled experimental and physiological research designed to improve basic knowledge concerning psychopathy using samples of college students rather than incarcerated participants.

Indeed, there has been considerable interest in creating and validating measures of psychopathic personality traits that can be used with community and college student populations (e.g., Levenson et al., 1995; Lilienfeld & Andrews, 1996; Williams, Paulhus, & Hare, 2007; for a review see Lilienfeld & Fowler, 2006). One of the most widely used self-report instruments is the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) and its revised version, the PPI-R (Lilienfeld & Widows, 2005). The PPI-R is a 154-item inventory that has eight content scales designed to cover the range of psychopathic personality traits. Factor analytic work suggests that this inventory assesses two or three higher-order factors (Benning et al., 2003; Berardino et al., 2005; Lilienfeld & Widows, 2005; Uzieblo, Verschuere, & Crombez, 2007; but see Neumann, Malterer, & Newman, 2008). The first factor captures social zest, immunity to stress, and thrill seeking whereas the second factor indexes a general susceptibility to deviance. Benning et al. (2005) labeled the first PPI factor "Fearless Dominance" (FD) and the second PPI factor "Impulsive Antisociality" (IA). Finally, there is evidence of a third factor which is primarily indicated by the Coldheartedness scale.

The psychopathic traits of FD and IA are one useful model for organizing the most salient personality attributes linked to psychopathy (e.g., Benning et al. 2003; Berardino et al. 2005; Lilienfeld & Andrews, 1996; Poythress, Edens, & Lilienfeld, 1998) and most researchers conceptualize these as largely orthogonal personality constructs (e.g., Patrick, in press). However, explicit measures of FD and IA have yet to be incorporated into many existing longitudinal community studies. Such studies provide important information about the development of normal personality attributes (e.g., Blonigen et al., 2008; Donnellan, Conger, & Burzette, 2007; see Caspi, Roberts, & Shiner, 2005 for a review) and could be used to study the development of psychopathic personality traits, a topic that receives considerably less attention (see Lynam & Gudonis, 2005). Given this concern, researchers have attempted to

derive measures of FD and IA from personality scales that are routinely used in community studies (Benning et al., 2005; Blonigen et al., 2006).

The creation of targeted measures of FD and IA using items in existing personality inventories is reasonable if one adopts the perspective that psychopathic traits are extreme variants of normally distributed personality characteristics (e.g., Lynam & Widiger, 2007; Miller & Lynam, 2003). If a given personality inventory provides a comprehensive assessment of normal personality, then it should be possible to use such an inventory to create targeted assessments of psychopathic personality traits. Consistent with this idea, Benning et al. (2005) found that prospective MPQ assessments accounted for a substantial amount of variability in the PPI factors assessed from 4 to 6 years later. Drawing on this work, Blonigen et al. (2006) used items from the MPQ to create separate FD and IA scales – the focal measures used in the present studies.

The Present Studies

The goal of these studies is to further the understanding and assessment of FD and IA. In Study 1, we evaluate the convergent validity of measures of FD and IA by examining associations between the MPQ-based measures and the PPI-R. We also examine how both sets of measures are associated with Levenson and colleagues' (1995) self-report psychopathy scale. In Study 2, we examine how measures of FD and IA are associated with other personality constructs that are frequently studied in the literature. Specifically, we examine measures of the Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS), measures of the Big Five traits (e.g., John & Srivastava, 1999), and other measures of the “dark triad” personality traits (i.e., Narcissism, Machiavellianism, and Psychopathy; Paulhus & Williams, 2002; Vernon, Villani, Vickers, & Harris, 2008). Thus, Study 2 provides important information about the position of FD and IA in the nomological network linking normal and abnormal personality traits and broad motivational systems. In Study 3, we examine stability and change in FD and IA from late adolescence to adulthood to replicate the developmental results of Blonigen et al. (2006). Finally, in Study 4, we examine the ability of self-reports of FD and IA to statistically predict criterion-related variables of externalizing and internalizing problems using data from the same sample as Study 3. Collectively, these studies provide important insights into the convergent validity, criterion validity, and developmental course of the MPQ-based measures of FD and IA.

Study 1

Study 1 examined the overlap between the PPI-R and MPQ measures. To our knowledge, no existing studies have examined the convergence between the MPQ-based measures and the PPI-R (Lilienfeld & Widows, 2005). Given previous work by Benning et al. (2005) who found that the MPQ scales shared a substantial amount of variance with PPI-FD and PPI-IA assessed 4 to 6 years in the future, we expected a high degree of convergence (i.e., *r*s above .7) between the respective measures of FD and IA. In addition, we examined how these measures were associated with the Levenson et al. (1995) measures of psychopathy.

Method

Sample

Three hundred and four students enrolled in psychology courses in a Midwestern university participated in exchange for course credit or extra credit (77% female). Participants were primarily in their first (59.5%), second (26%), or third (8.9%) year of college.

Measures

MPQ-Based Measures of Psychopathic Traits (Blonigen et al., 2006). Fearless Dominance (MPQ-FD: $M = 2.67$, $SD = .37$, $\alpha = .80$, 24 items) and Impulsive Antisociality (MPQ-IA: $M = 2.06$, $SD = .35$, $\alpha = .85$, 34 items) were measured with a four-point scale (1 = "False," 2 = "Somewhat False," 3 = "Somewhat True" to 4 = "True"). MPQ-FD and MPQ-IA were uncorrelated ($r = .03$).

Blonigen et al. (2006, p. 87) describe the procedures used to select items for their measures. Briefly, items common to the various versions of the MPQ were selected for the respective scales if they correlated with the target PPI dimension (FD or IA) at least |.20| and were correlated with the non-target PPI dimension at a value that was less than half of the target correlation. For instance, an item that was associated .20 with FD would have to correlate less than .10 with IA to be selected for the MPQ-based FD scale.

Psychopathic Personality Inventory Revised (PPI-R; Lilienfeld & Widows, 2005). The PPI-R contains eight content subscales which were each measured on the same four-point scale used for the MPQ items. PPI-FD was created by z-scoring and averaging the Social Influence, Stress Immunity, and Fearlessness content scales ($M = 0.00$, $SD = .75$, $\alpha = .87$) and PPI-IA was created by z-scoring and averaging the Machiavellian Egocentricity, Rebellious Nonconformity, Carefree Nonplanfulness, and Blame Externalization content scales ($M = 0.00$, $SD = .72$, $\alpha = .90$). The eighth content scale, Coldheartedness ($M = 2.76$, $SD = .59$, $\alpha = .78$) is typically considered a dimension that is relatively distinct from FD and IA (e.g., Benning et al., 2003; Lilienfeld & Widows, 2005). PPI-FD and PPI-IA were correlated ($r = .33$; see also Uzieblo et al., 2007 who reported a similar correlation in an undergraduate sample).

Levenson's Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, and Fitzpatrick, 1995). The Levenson scale consists of 26 items ($M = 2.44$, $SD = .47$, $\alpha = .87$) measured on a 5-point scale (1 = "Strongly Disagree to 5 = "Strongly Agree"). The Levenson measure can be scored into two content scales labeled "primary" and "secondary." The primary scale was designed to assess interpersonal attitudes whereas the secondary scale was designed to assess an impulsive lifestyle. The primary and secondary scales were correlated ($r = .43$).

Results and Discussion

For all analyses reported in this paper, we used $p < .01$ as our convention for judging coefficients statistically significant and all coefficients met this threshold unless otherwise noted. We interpreted correlations and *d*-metric effect sizes using Cohen's rule of thumb (i.e., an *r* of |.1| was considered small whereas a *d* of |.2| was considered small; see e.g., McCartney & Rosenthal, 2000).

The correlations between MPQ-measures and the PPI-R composite scales are reported in Table 1. Both FD and IA scales derived from the MPQ demonstrated strong convergence with their respective PPI-R composite scales (*r*s > .70). This provides support for the argument that items from measures of normal personality can be used to assess psychopathic personality traits. However, neither MPQ scale was strongly associated with the PPI-R Coldheartedness scale. This suggests that the existing MPQ-based measures of psychopathy are only mildly associated with traits related to callousness and indifference to suffering (i.e., aspects of personality purportedly captured by the Coldheartedness scale).

The correlations between the Levenson scales and measures of FD and IA are also displayed in Table 1. Both IA scales were strongly correlated with the Levenson primary and secondary scales, a finding that supports the claim by Lilienfeld and Fowler (2006) that the LSRP captures traits related to the propensity for deviancy and antisocial behavior. We found little overall

association between the MPQ-FD scale and the LSRP total score, although the PPI-FD composite scale showed a moderate positive correlation with the Levenson total score and the primary scale. However, when we controlled for the shared variance between the PPI-FD and PPI-IA composite scales in a regression analyses predicting the LSRP scales, the associations between PPI-FD and the LSRP total score and primary scale were much more comparable to the zero-order MPQ-FD associations (β = .03 and .12 for total score and primary scale, respectively). Thus, the apparent association between PPI-FD and the Levenson scales are driven by variance in the PPI-FD scale composite that overlaps with the PPI-IA scale composite. In sum, we found little indication that the unique aspects of FD were strongly associated with the LSRP scales whereas there appears to be considerable overlap between IA and the LSRP scales.

Ancillary Latent Variable Analyses with the PPI-R Scales

We also examined the higher-order structure of the PPI-R given recent concerns about its factor structure (Neumann et al., 2008). A correlation table with means and standard deviations for the PPI-R scales is included in the Appendix. We initially used exploratory factor analytic (EFA) techniques given that this was the approach Benning et al. (2003) used to identify the higher-order structure of the PPI. We submitted the first seven PPI-R scales (i.e., all scales except Coldheartedness) to a principle-axis EFA followed by a varimax rotation. The first three initial eigenvalues were 2.604, 1.475, and 0.850 which suggested a two factor solution. Moreover, a three factor solution would not converge. Factor I had major structure/pattern coefficients (i.e., above .40) for Rebellious Nonconformity (PPI Scale Label: Impulsive Nonconformity), Blame Externalization, Machiavellian Egocentricity, and Carefree Nonplanfulness and thus looked like IA. Factor II had major structure/pattern coefficients for Social Influence (PPI Scale Label: Social Potency), Stress Immunity, and Fearlessness and thus looked like FD. In short, our EFA results yielded substantive conclusions that were generally similar to those reported by Benning et al. (2003).

We then saved factor scores from these analyses using the regression method. Factor I scores were strongly associated with MPQ-IA (r = .78) but they were not associated with MPQ-FD (r = .05) whereas Factor II scores were strongly associated with MPQ-FD (r = .68) and had only small associations with MPQ-IA (r = .11, p = .047). These results add support for our contention of convergence across the MPQ-Based measures and the higher-order factors of the PPI-R. Our interpretations were similar when we examined a promax rotated solution as factor scores from this approach strongly converged with the MPQ-Based measures (r = .77 for IA and r=.67 for FD). Results were also similar when we included the Coldheartedness scale in the factor analyses.

We then attempted to use confirmatory factor analytic techniques to evaluate the structure of the PPI-R; however, we expected to have problems with model fit given what generally happens when EFA-derived solutions are subjected to CFA-based tests (e.g., van Prooijen & van der Kloot, 2001). The initial model was specified such that Rebellious Nonconformity, Blame Externalization, Machiavellian Egocentricity, and Carefree Nonplanfulness loaded onto a latent IA factor whereas Social Influence, Stress Immunity, and Fearlessness loaded onto a latent FD factor. The latent factors were allowed to correlate. This model had an unacceptable fit by even liberal standards (e.g. TLI = .605; RMSEA = .168; chi-square test of exact fit = 124.866; df = 13).

We then requested modification indices (as calculated by the Mplus program; e.g., Muthén & Muthén, 2004) and sequentially added parameters that had the largest modification index values to improve model fit. We first added parameters that captured cross-loadings and ended up including 3 (Fearlessness to IA; Rebellious Nonconformity to FD; Blame Externalization to FD). We then added two correlated residuals (Social Influence and Machiavellian

Egocentricity; Stress Immunity and Carefree Nonplanfulness). This model was not rejectable by the chi-square test of exact fit (11.779; *df* = 8) and resulted in two latent factors that were largely distinct (*r* = .11, *p* = *ns*). In a separate analysis, we modeled correlations to manifest indicators for MPQ-FD and MPQ-IA and found strong convergence (PPI-FD and MPQ-FD: *r* = .88; PPI-IA and MPQ-IA: *r* = .88) and appropriate divergence (PPI-FD and MPQ-IA: *r* = .04; PPI-IA and MPQ-FD: *r* = .18). All in all, we had confidence that the MPQ-based measures corresponded to the two major higher-order factors of the PPI-R based on three lines of evidence: "raw" scale correlations, EFA-derived factor scores, and CFA results that were obtained after a specification search to improve model fit.

Study 2

The goal of Study 2 was to further place FD and IA in the nomological network linking individual difference constructs. Specifically, we examined three questions prevalent in the psychopathy literature. First, there has been some debate about the relation between psychopathy and the Behavioral Inhibition System (BIS) and the Behavioral Activation System (BAS; see Fowles & Dindo, 2006 for a discussion). For instance, Gray (1970) suggested that psychopaths seek reward and that their persistent antisocial actions reflect insensitivity to punishment – implying a weak BIS and a normal to strong BAS. Though some have embraced this reasoning (e.g. Lykken, 1995; Uzieblo et al., 2007), the relation between psychopathy and BIS/BAS remains contentious. Accordingly, in Study 2 we included measures of the BIS/BAS to examine their associations with FD and IA.

Second, some researchers have argued that aspects of the psychopathic personality can be represented within the Big Five or Five Factor Model (FFM) scheme for organizing normal personality traits (Lynam & Widiger, 2007; Miller & Lynam, 2003; Miller, Lynam, Widiger, & Leukefeld, 2001). Miller et al. (2001) created a FFM profile of psychopathy by asking 16 experts to "rate the prototypical, classic Cleckley psychopath" on 30 one-item descriptions that correspond to the 30 facets of the NEO-PI-R (Costa & McCrae, 1992). The expert generated profile of the psychopath is characterized as someone who is generally low in Agreeableness, Conscientiousness, and Neuroticism (except for the Impulsivity and Angry Hostility facets) and generally high in Extraversion (except for the Warmth facet). Given these results and the content of the FD and IA scales, we expected that FD will most strongly correlate with a broad measure of Extraversion (positively) and Neuroticism (negatively) whereas IA would negatively correlate with a broad measure of Agreeableness and Conscientiousness.

Third, psychopathic traits are often discussed in conjunction with two other potentially socially aversive personality traits, Narcissism and Machiavellianism. Paulhus and Williams (2002) refer to these three as the "dark triad" of personality. To determine the relation of FD and IA to these constructs, we included another self-report measure of psychopathy, the third version of Self-Report Psychopathy Scale (SRP; Paulhus, Hemphill, & Hare, 2007) as well as measures of Narcissism and Machiavellianism. We expected the total score of the Self-Report Psychopathy scale to be strongly associated with MPQ-IA and relatively weakly associated with MPQ-FD given that this version of the SRP mostly emphasizes content related to a general propensity to deviance. Similarly, because the MPQ-IA scale captures a general tendency toward interpersonal manipulativeness we expected it to be positively associated with Machiavellianism. On the other hand, MPQ-FD captures a confident and socially dominant interpersonal style and therefore we expected it to be positively related to Narcissism.

Method

Sample

Four hundred and five students enrolled in psychology courses in a Midwestern university participated (74.1% female). Most participants' were between 18-22 years old: 18 (39.4%), 19 (28.6%), 20 (14.4%), 21 (11.1%), and 22 (3.6%) respectively. In addition, most participants were in their first (39.4%), second (29.8%), or third (14.7%) year of college.

Measures

All measures were assessed on a 5-point scale (1 = “Strongly Disagree” to 5 = “Strongly Agree”) unless otherwise noted.

MPQ-Based Measures of Psychopathic Traits (Blonigen et al., 2006). Fearless Dominance and Impulsive Antisociality were measured with the same instrument described in Study 1 (*M* =2.60, *SD* = .35, α = .82 and *M* = 2.14, *SD* = .34, *α* = .85, respectively). FD and IA were uncorrelated (*r* = .04).

Behavioral Inhibition and Behavioral Activation System (BIS/BAS; Carver & White, 1994) The BIS/BAS inventory consists of twenty non-filler items. The BIS scale (*M* = 3.61, *SD* = . 59, α = .79) measures the tendency to avoid aversive situations. The BAS scale (*M* = 3.66, *SD* = .40, α = .80) captures the tendency to approach something desired. The BAS scale can further be computed into three subscales: Drive (*M* = 3.31, *SD* = .55, α = .69), Fun Seeking (*M* = 3.60, *SD* = .56, α = .65), and Reward Responsiveness (*M* = 3.98, SD = .49, α = .80).

The Mini-IPIP (Donnellan, Oswald, Baird, and Lucas, 2006). The Mini-IPIP is a 20-item inventory designed to assess each of the Big Five trait domains with four items: Extraversion (*M* = 3.33, *SD* = .75, α = .76), Agreeableness (*M* = 3.81, *SD* = .63, α = .71), Conscientiousness (*M* = 3.33, *SD* = .67, α = .64), Neuroticism (*M* = 2.87, *SD* = .73, α = .73), and Openness (*M* = 3.51, *SD* = .69, α = .71).

Self-Report Psychopathy Scale III (SRP-III-R12; Paulhus et al., 2007). This is a 64-item inventory designed to measure subclinical psychopathy. The overall scale (*M* = 2.30, *SD* = . 42, α = .93) can be divided into four 16-item subscales: *Interpersonal Manipulation* (*M* = 2.57, *SD* = .54, α = .85), *Callous Affect* (*M* = 2.31, *SD* = .49, α = .79), *Erratic life style* (*M* = 2.67, *SD* = .52, α = .78), and *Criminal tendencies* (*M* = 1.60, *SD* = .55, α = .86). The sub-scale inter-correlations ranged from .48 to .63.

Narcissistic Personality Inventory (NPI-16; Ames, Rose, and Anderson, 2006). The NPI-16 items consist of two pairs of phrases and participants are asked to choose the one that is the most self-descriptive. Scores were calculated so that the individual score reflects the percentage of narcissistic items endorsed (*M* = .38, *SD* = .22, α = .75). Ames et al. (2006) reported a correlation of .90 between scores on this measure and the full 40-item NPI (Raskin & Terry, 1998).

Machiavellianism (MACH-IV; Christie & Geis, 1970). This scale assesses cynical attitudes about human nature and a person's willingness to manipulate others for personal gain (*M* = 3.13, *SD* = .49, α = .71). It is comprised of 20 items measured on a 6-point Likert scale.[1]

[1]The MACH-IV was strongly correlated with the SRP total score in these data (*r* = .54), a finding similar to the .51 correlation reported by Vernon et al. (2008).

Results and Discussion

The correlations between FD and IA and measures of individual differences frequently studied in the literature are reported in Table 2. FD was negatively associated with the BIS scale and positively associated with the BAS scale. These correlations are similar to the findings of Uzieblo and colleagues (2007) and were consistent with the notion of FD as capturing a tendency toward low behavioral inhibition (i.e., low fear, distress). In contrast, IA was more independent of the BIS and BAS scales. In terms of the Big Five, FD was positively associated with Extraversion and Openness and negatively associated with Neuroticism. The association with Openness was not completely unexpected given the contention by Digman (1997) that Extraversion and Openness both measure a higher-order factor linked with agency and personal growth. IA was negatively correlated with Agreeableness and Conscientiousness, as expected. IA was also positively associated with Neuroticism, in part because the Mini-IPIP scale also captures the angry hostility aspects of that trait (Donnellan et al., 2006).

Table 2 also reports the associations between FD and IA and measures of the dark triad. FD was modestly associated with total scores on the SRP-III (a measure of psychopathy) whereas IA was strongly associated with the SRP-III total score. Moreover, all four of the SRP-III subscales were strongly associated with IA (*r*s ranged from .56 to .68) whereas FD was largely unrelated to the Criminal Tendencies scale ($r = .05$) and modestly associated with the Interpersonal Manipulation and Erratic Life Style scales (*r*s ranged from .24 to .28). These results suggest that the MPQ-based IA scale demonstrates a considerable amount of convergent validity with an existing measure of psychopathy. Conversely, these results confirm our expectation that the MPQ-based FD scale is fairly distinct from the aspects of psychopathy assessed by the SRP-III. In conjunction with findings reported for Study 1, it appears that the MPQ based IA scale strongly correlates with two widely used self-report measures of psychopathy – the LSRP and the SRP-III.

In considering the other aspects of the so-called dark triad, we saw a fairly clear pattern of divergence for FD and IA. FD was associated with Narcissism but largely unrelated to Machiavellianism, whereas IA was more strongly linked to Machiavellianism than Narcissism. In general, Table 2 suggests that FD and IA hold different places in the nomological network linking individual difference constructs. IA is associated with measures of interpersonal antagonism and low self-control whereas FD is associated with measures of fearlessness, emotional stability, and social dominance.

Study 3

The goal of Study 3 was to replicate and extend the Blonigen et al. (2006) analysis of the developmental course of FD and IA during the transition from adolescence to adulthood. Specifically, Blonigen et al. found evidence of differential stability for FD and IA (retest coefficients = .60 and .53, respectively) and evidence of mean-level change for IA ($d = -.93$) for a sample followed from ages 17 to 24. Consistent with this previous work, we expected that both FD and IA would show appreciable differential stability and exhibit mean-level declines with an especially large drop for IA. We tested this prediction using data from an existing on-going panel study that has been used to study normal personality development during the transition from adolescence to adulthood (Donnellan et al., 2007). Of note is the fact that the present study extended the Blonigen et al. analyses over a longer interval (9 years versus 6 years).

Method

Sample

The sample analyzed here was drawn from the 432 participants (57% women) who completed self-reports of Impulsive Antisociality and Fearless Dominance during Years 1(primarily collected during calendar year 1994) and 10 (primarily collected during calendar year 2003) of the Family Transitions Project (see Conger & Conger, 2002).[2] Complete details regarding the normative personality development of this sub-sample are reported in Donnellan et al. (2007). The sample was overwhelmingly White/European American (99.1%); and the average age of participants at Year 1 was 17.60 years (SD = .55) and 27.24 years (SD = .50) at Year 10.

It is important to emphasize that the Family Transitions Project is a community sample based in Iowa. Participants in the Family Transitions Project originally took part in two separate research projects, the Iowa Youth and Families Project (IYFP) and the Iowa Single Parent Project (ISPP). IYFP families were recruited from eight counties in north central Iowa in 1989 for a study of family economic stress in the rural Midwest. Seventy-eight percent of the families eligible for the study agreed to participate, each with a target seventh grader (the focal participant in the Family Transitions Project), a sibling within four years of age, and the target's married biological parents. The ISPP began in 1991 and included mother-headed families recruited from a cohort of eighth- and ninth-grade students living in similar geographic locations as the IYFP families. The IYFP and ISPP samples were combined into a single study cohort in 1994 to examine how individuals make the transition from adolescence to adulthood. The MPQ items were administered in Year 1 of the FTP when participants were in their senior year of high school. The sub-sample analyzed here represents 82.3% of the 525 total participants in 1994 with MPQ data.

Measure

MPQ-Based Measures of Psychopathic Traits (Blonigen et al., 2006). Fearless Dominance (M = .62, SD = .18, α = .79 in 1994; M = .58, SD = .19, α = .77 in 2003) and Impulsive Antisociality (M = .40, SD = .19, α = .82 in 1994; M = .21, SD = .15, α = .83 in 2003) were measured with the same items used in Studies 1 and 2. All items were measured on a true/false scale and averaged such that higher numbers indicate a higher proportion of endorsed items. FD and IA were uncorrelated in both 1994 and 2003 (r = .06 at both time points).

Results and Discussion

We first examined the similarity of the factor structure of the MPQ-measures across time. We performed two exploratory factor analyses on the FD and IA items using Mplus (e.g., Muthén & Muthén, 2004), which has appropriate algorithms for modeling dichotomous indicators. We extracted a two factor solution and found substantial correlations (r = .84 and r = .89) between the respective vector of pattern coefficients for the IA and FD factors in 1994 and 2003. We also found that the average of the absolute value of the differences between the pattern coefficients in 1994 and 2003 was relatively low (IA: M = .19, SD = .12; FD: M = .17, SD = .11). Thus, we had reasonable confidence that measures of FD and IA had a similar structure in 1994 and 2003 and therefore proceeded to conduct longitudinal analyses.

Table 3 displays the differential and mean-level stability of FD and IA. Both FD and IA demonstrated appreciable consistency across the interval from adolescence to young adulthood. In other words, adolescents who were relatively high (or low) in these psychopathic

[2]One participant was excluded from these analyses because she or he completed the year 10 assessment in early 2005.

traits tended to develop into adults who were also relatively high (or low) in these traits. This general pattern was consistent with the results reported by Blonigen et al. (2006) who also found appreciable differential stability in these traits. Upon further analysis, we found evidence for a gender difference in the stability coefficient for FD in this sample using a test of independent correlations such that men showed less stability than women (.38 versus .56, z = 2.46) whereas we found no evidence of a gender difference for IA (.51 versus .41, z = 1.35). Blonigen et al. (2006) did not find gender differences in stability coefficients. One possible explanation is that we examined a longer period of time in the present study and followed participants farther into adulthood (i.e. the average age at the last assessment in Blonigen et al. was 24). On the other hand, we are also cautious about over-interpreting this finding given that previous work has not provided consistent evidence of substantial gender differences in the differential stability of personality attributes (e.g., Roberts & DelVecchio, 2000, p. 16).

Table 3 also displays evidence of mean-level decline for both FD and IA, although the *d*-metric effect size for IA was much larger than the effect size for FD. Gender did not moderate the IA drop whereas gender moderated the FD drop based on a significant Gender by Time interaction in a repeated measures ANOVA (F = 4.24, df = 1, 430). Results indicated that women (d = −.28) declined more than men (d = −.06). The substantial drop in IA during the transition to adulthood is consistent with results in Blonigen et al. (2006). The one deviation from the Blonigen et al. results is that they did not find reliable evidence for an overall drop in FD; however, they found evidence of a gender difference such that women declined slightly (d = −.18) whereas men slightly increased (d = .12). Once again, a potential explanation for this discrepancy is that we examined a longer interval of time in this study than was examined in Blonigen et al. (2006) and any differences between the two studies may reflect developmental processes that play out past age 24. Nonetheless, we placed more emphasis on the broad convergence as the overall change in FD was considerably smaller than the overall change in IA across both studies.

Study 4

In Study 4 we examined the correlates of psychopathic traits for various kinds of internalizing and externalizing problems including delinquency, substance use, anxiety, and general distress using the same dataset described in Study 3. Consistent with previous research (Blonigen et al., 2005; Benning et al., 2005), we expected to find negative associations between Fearless Dominance and internalizing symptoms whereas we expected that Impulsive Antisociality would be positively correlated with delinquency and externalizing symptoms. As an extension we examined the predictive ability of self-reported FD/IA to predict informant reports (both parent and romantic partner) of internalizing and externalizing problems. Additionally, we examined differences in mean levels of FD and IA between groups of participants meeting criteria for ASPD/CD and substance disorders relative to a control group of participants with no diagnosed psychopathology. Thus, as a package, Study 4 provides important criterion-related validity data for the relation between MPQ-based measures of psychopathic personality and psychopathology.

Sample

The sample analyzed in Study 4 was described in Study 3. At least one parent provided an informant report in 1994 for 413 participants (96% of the 432 participants), whereas 326 romantic partners provided informant reports in 2003 (75% of the 432 participants).

Measures

Externalizing Problems (1994)

Self-Reports of Delinquency: Delinquent behavior was assessed by self-report with 26-items from the National Youth Survey (Elliott & Ageton, 1980; *M* = 1.22, *SD* = .28, α = .84). Participants indicated the frequency of their delinquent during the past 12 months (e.g., "Purposely damaged or destroyed property that did not belong to you") using a 5-point scale.

Self-Reports of Substance Use: The use of substances in the last 30 days was assessed with 11 items using a 6-point scale. Sample items include "Drink beer, wine, or wine coolers" and "Smoke marijuana." (*M* = 1.31, *SD* = .40, α = .74).

Parent Report of Externalizing Problems: Parents answered five items regarding the externalizing behaviors of their son or daughter (e.g., "gets into trouble," "sometimes breaks the law," "drinks alcohol such as beer, wine, etc") using a 5-point scale. Items were coded to reflect higher levels of externalizing problems (*M* = 1.47, *SD* = .59, α = .81 and *M* = 1.49, *SD* = .61, α = .86, for reports for mothers and fathers, respectively; *r* = .69). Parent reports showed convergent validity with self-reports of delinquency (*r* = .52) and self-report of substance use (*r* = .67).

Externalizing Problems (2003)

Self-Reports of Deviant Behavior: Focal participants were asked to provide the number of times they engaged in 15 behaviors related to rules and laws (e.g., "Sell illegal drugs"). We had to drop four serious items because no one reported any instance of the specific behavior (e.g., "Use force to get money"). Given the positive skew in the remaining items, we recoded each into a variety score such that participants received a "1" if they reported doing the behavior at all and a "0" if they did not (*M* = .06, *SD* = .09). The alpha for this measure was fairly low (.50), perhaps because of the limited variability in the items.

Self-Reports of Substance Use: Substance use over the past month and year was assessed using a similar substance use inventory as the one administered in 1994 (*M* = 1.48, *SD* = .45, α = .64).

Partner Report of Externalizing Problems: Romantic partners provided a report on the focal individual's externalizing behaviors using 6 items (*M* = 1.41, *SD* = .50, α = .82; e.g., "She/he has had many arguments or conflicts with other people"). This measure correlated .24 with self-reports of deviant behavior.

Partner Report of Substance Use: Romantic partners provided a report on the focal individual's substance use over the month using 5 items (*M* = 2.12, *SD* = 3.78, α = .47; e.g., "Have 5 or more alcoholic drinks in a row"). The alpha was relatively low for this scale; however, the correlation with self-reports of substance use was .51.

Internalizing Problems (1994)

Self-Reports: Symptoms of depression (13-items, *M* = 1.62, *SD* = .62, α = .91, anxiety (10-items, *M* = 1.42, *SD* = .54, α =.90), and hostility (6-items, *M* = 1.57, *SD* = .65, α =.86) were assessed with items from the *Symptom Checklist – 90 – Revised* (SCL-90-R; Derogatis, 1983) using a 5-point scale.

Parent Reports: Parents answered five items regarding the internalizing symptoms of their son or daughter ("always worried," "always sad or depressed," "feels hopeless about the future") using a 5-point scale. Items were coded to reflect higher levels of internalizing

symptoms (*M* = 1.69, *SD* = .65, α = .79 and *M* = 1.71, *SD* = .63, α = .77, for reports for mothers and fathers, respectively; *r* = .40). Parent reports showed convergent validity with self-reports of depression (*r* = .25) and anxiety (*r* = .26).

Internalizing Problems in 2003

Self-Reports: The Mini-Mood and Anxiety Questionnaire (Mini-MASQ; Casillas & Clark, 2000) was used to assess symptoms of General Distress (8-items, M = 1.48, SD = .65, α =.91), Anhedonic Depression (8-items, *M* = 2.42, *SD* = .68, α = .89), and Anxious Arousal (10-items, *M* = 1.15, *SD* = .29, α =.83). The Mini-MASQ was designed to assess the tripartite model of the internalizing spectrum (Clark & Watson, 1991) and yields measures of depression and anxiety that are more distinct than many other internalizing symptom inventories (*r* for Anxious Arousal and Anhedonic Depression = .23).

Partner Reports: An informant report of the Mini-MASQ was used to assess symptoms of General Distress (8-items, *M* = 1.41, *SD* = .54, α =.87), Anhedonic Depression (8-items, *M* = 2.44, *SD* = .65, α = .89), and Anxious Arousal (10-items, *M* = 1.11, *SD* = .33, α =.90). These reports from romantic partners were correlated with self-reports (*r* = .39, .41, and .19 for General Distress, Anhedonic Depression, and Anxious Arousal, respectively).

Life Time Psychiatric Disorders—Psychiatric disorders were assessed up to 1999 using the University of Michigan's modified Composite International Diagnostic Interview (Kessler, et al., 1994). Additional description of the psychiatric disorder data collection procedures used in the FTP can be found in Rueter, Scaramella, Ebert-Wallace, and Conger (1999). This fully structured diagnostic interview generates DSM-III-R lifetime psychiatric diagnoses. For the present analyses, we compared individuals with a life-time diagnosis of conduct disorder and/or antisocial personality disorder (*n* = 17, 4% of the 432 participants) to a control group of participants who did not meet criteria for any assessed disorders (*n* = 168, 39% of the 432 participants). We also compared individuals with a life-time diagnosis of a substance dependence disorder including alcohol dependence (*n* = 44, 11% of the 432 participants) to the control group. To assure that measures of disorder clearly described the syndromes of interest, disordered groups were limited to those individuals who were not comorbid for any other disorder.[3]

Results and Discussion

We predicted that IA would positively correlate with variables that assessed externalizing spectrum problems. This prediction was largely confirmed as seen in Table 4. We also found that reports of FD had relatively small, albeit positive, correlations with reports of delinquency and substance use. Table 4 also displays criterion-related validity for measures related to internalizing symptoms. As hypothesized, FD was generally negatively correlated with internalizing symptoms and IA was mostly positively related to measures of distress. An important caveat is that we found no evidence linking self-report of IA with partner-reports of internalizing problems except for reports of Anhedonic Depression. We repeated these results using regression analyses (i.e., criterion variables were regressed on both FD and IA). Results were nearly identical given the minimal overlap between FD and IA as reported for this sample in Study 3 (i.e. *r*s = .06 in 1994 and 2003).

Finally, we examined whether there were differences in FD and IA between individuals with and without relevant psychiatric disorders as displayed in Table 5. We calculated z-scores for

[3]Comparisons on IA and FD for an affective disorders group (*n* = 22) and anxiety disorders group (*n* = 44) did not yield statistically significant results (a complete table is available upon request).

FD and IA and then compared the control group to the disordered groups using *t*-tests and *d*-metric effect sizes. As seen in Table 5, we found evidence that both IA and FD scores were elevated in individuals with a lifetime diagnosis of any substance use disorder and evidence that IA scores were elevated in individuals with a lifetime diagnosis of Antisocial Personality Disorder/Conduct Disorder.

General Discussion

The goal of this research was to contribute to the literature concerning the assessment of psychopathic personality characteristics using self-reports. Our starting point was the major factors assessed by the Psychopathic Personality Inventory, Fearless Dominance (FD) and Impulsive Antisociality (IA) indentified by Benning et al. (2003). In Study 1, we demonstrated that MPQ-based measures of FD and IA strongly converged (*r*s > .70) with corresponding composite scales from the PPI-R. This result indicates that the MPQ-based scales and the higher-order factors in the PPI-R are assessing very similar aspects of personality. Moreover, this study converges with a recent study using item response theory that found MPQ based measures capture largely the same psychometric information as the PPI, with the exception of the Coldheartedness scale (Walton et al., in press).[4] In Study 2, we evaluated how the MPQ-based measures of FD and IA were associated with existing measures of both normal and abnormal personality traits and showed that FD and IA hold different places in a nomological network. In Studies 3 and 4, we examined questions related to the developmental course and criterion-related validity of FD and IA in a community sample. As a package, these studies provide useful psychometric and developmental data concerning FD and IA. We now consider some of the broader implications of this research.

Furthering the Understanding of Fearless Dominance and Impulsive Antisociality as Personality Constructs

In terms of FD, this trait appears to capture personality characteristics such as confidence, social dominance, and emotional stability that are linked with an absence of psychopathology. As such, we suggest that this trait might be positioned in the interstitial "factor" space between Extraversion and Neuroticism and between BIS and BAS. This contention that FD captures aspects of personality that exist at the intersections of the "Big Two" dimensions of personality and temperament (see e.g., Clark & Watson, 1999) is consistent with the work of Hofstee, De Raad, and Goldberg (1992) who identified adjectives that exist in the factor space that runs at approximately 45 degrees between Extraversion and Neuroticism. These adjectives appear to cleanly map onto FD. For example, adjectives such as courageous, unselfconscious, assured, confident, and bold appear at the positive pole of this dimension and adjectives such as fearful, insecure, negativistic, and self-pitying appear at the negative pole of this dimension. The idea that FD is linked with the "Big Two" is also consistent with the contention of Miller and Lynam (2003) that certain aspects of psychopathy are related to high Extraversion and low Neuroticism and this pattern seems to be protective against internalizing psychopathology.

Conversely, IA seems to capture aspects of personality related to deficiencies in self-control and an antagonistic and manipulative interpersonal orientation – characteristics which are heavily emphasized in existing self-report measures of psychopathy. Indeed, the MPQ-IA scale is strongly correlated with these measures as demonstrated in Studies 1 and 2. That is, the SRP-III, LSRP, PPI-IA, and MPQ-IA all seem to tap similar dimensions of personality (see also Derefinko & Lynam, 2006). These aspects of personality also appear to overlap with Machiavellianism (see also Vernon et al., 2008). In keeping with our speculations about the

[4]Unfortunately research on the unique correlates of the PPI-R Coldheartedness scale is relatively scarce. This scale seems to assess an important element of the syndrome of symptoms linked psychopathy (viz., an absence of empathy and guilt) and deserves more research attention. The availability of this scale is one reason why researchers may want to use the PPI-R in subsequent studies.

placement of psychopathic personality traits in Big Five factor space, IA appears to fall at the intersection of Conscientiousness and Agreeableness. Hofstee et al. (1992) found that adjectives like reliable and dependable exist at the high end of the dimension in factor space between Conscientiousness and Agreeableness whereas adjective like rebellious, thoughtless, and dishonest exist at the low end of this dimension. These adjectives map nicely to the content of IA. Likewise, our results and interpretation are in line with Miller and Lynam's (e.g., 2003) contention that certain aspects of psychopathy are related to low Agreeableness and low Conscientiousness. [5]

The pattern of results for IA seems to fit well with existing conceptualizations of psychopathic personality features, especially those personality features that are explicitly linked with antisocial behavior. However, the results for FD are somewhat less straightforward. One potentially troublesome issue is that we did not find a good deal of evidence linking FD with explicit measures of antisocial behavior (although we did find elevated levels of FD in participants who met criteria for a substance use dependence disorder in Study 4). Antisocial behavior is often considered the hallmark of psychopathy and it is sometimes the sole criterion for validating psychopathy measures. This naturally leads to the question of whether those aspects of personality linked with FD should be considered “core” features of psychopathy.

Whether or not FD is central to psychopathy is a contentious issue. At this point, we think that it is safe to assert that FD captures personality attributes that are salient features of the clinical syndrome classically described by Cleckley. Most notably, FD may capture the aspects of positive adjustment such as the “absence of nervousness” and the presence of “superficial charm” which perhaps led Cleckley to use the phrase “mask of sanity” to famously describe psychopaths (see Patrick, in press). These features of positive adjustment do not seem to be well captured by existing self-report measures of psychopathy (i.e., LSRP, SRP-III) which are often saturated by content related to general proneness to deviancy. Thus, there are certain conceptual advantages to using measures of both FD and IA in work concerning the personality attributes linked with psychopathy because this approach seems to capture a wider range of the attributes that have been classically linked with this personality disorder.

As we have noted elsewhere (Witt & Donnellan, 2008), we believe that the ultimate resolution of the debate over the importance of FD for psychopathy should boil down to empirical concerns. Quite simply, does this construct actually predict phenomena that are useful, interesting, and relevant? To be sure, we are not convinced that all personality characteristics linked with psychopathic individuals need to be related to explicit antisocial behavior. Some characteristics should be linked to a reduced risk of internalizing psychopathology and certain narcissistic attributes such as confidence. Some of these attributes may have little to do with antisocial behavior. Future research that evaluates how both FD and IA are linked to all of outcomes of interest can help draw distinctions between those personality characteristics that are socially destructive from those that are clinically interesting but unrelated to antisocial behavior.

Stability and Change in FD and IA During the Transition to Adulthood

In Study 3, we replicated the major findings of Blonigen et al. (2006) regarding the development of FD and IA during the transition to adulthood. In particular, FD and IA show an appreciable degree of differential stability during a 9-year interval. At the same time, however, average levels of these traits drop during the transition to adulthood with the drop in IA being noteworthy for its size (i.e., a drop of at least 1 SD in Time 1 units). This large drop for IA is

[5]We note that the connection we observed between IA and Neuroticism in Study 2 does not necessarily invalidate this interpretation. We suspect that this association might be driven by the Angry Hostility and Impulsivity aspects of Neuroticism. Future work using the facets of the Five Factor Model would help clarify this issue.

consistent with the work on normal personality traits which shows that the normative trend is toward increased self-control and drops in aggressive impulses and hostility during the transition to adulthood (see also Caspi et al., 2005). Thus, both normal and more pathological personality traits show similar developmental trends during the transition to adulthood.

We should emphasize that this replication is important because there are relatively few duplications of longitudinal findings covering appreciable time periods. To the extent that broad patterns replicate across different samples, researchers can have increased confidence in the robustness of the findings. At this point, it seems safe to conclude that the transition to adulthood is associated with average-level declines in traits linked with low self-control and interpersonal hostility. Such changes may facilitate enhanced performance in the major roles of adulthood such as worker, committed romantic partner, and perhaps parent or caregiver. There is also the possibility that such roles may even create demands for these personality changes (see e.g., Roberts, Wood, & Smith, 2005). As such, it may be useful to evaluate whether or not particular life experiences are associated with reductions in levels of psychopathic personality traits, which in turn may have implications for the treatment of certain personality features linked with psychopathy. The present package suggests that the MPQ-based measures might be useful for this purpose given that the MPQ is present in several existing longitudinal studies that could be used to study links between life events and personality change.

Limitations and Conclusions

Some limitations of this work should be noted. First, Studies 1 and 2 were cross-sectional investigations of college students and should be viewed with the appropriate cautions. Second, shared-method variance may have contributed to the size of the associations between self-reports of measure of psychopathy and criterion-variables. This is a potentially significant limitation of Studies 1-3 and it is a concern for associations between self-reported variables in Study 4. On the other hand, the concern that all self-reported associations are simply artifacts of shared-method variance is obviated by the existence of discriminant associations (e.g., MPQ-FD and MPQ-IA were not typically correlated in these studies).

Third, some researchers have concerns about the strength of the convergence between Hare's PCL-R (e.g., Hare, 1991) and the PPI/PPI-R higher-order dimensions. This debate is far from resolved and the present data are not relevant given that we did not use the PCL-R and thus do not have data to bear on this controversy. Fourth, we used non-incarcerated samples in all four studies so we are not able to make claims about the suitability of the MPQ-based measures for use in forensic populations. Finally, the sample used in Studies 3 and 4 is an existing on-going panel study that was not explicitly designed to study the development of psychopathic traits. Nonetheless, Studies 3 and 4 illustrate how existing resources can be utilized to further study psychopathic personality traits.

In closing, psychopathic personality traits have captured the attention of clinical psychologists for decades and personality psychologists are likewise becoming increasingly interested in these constructs. Most importantly, we found that psychopathic personality traits can be assessed with items from an inventory designed to study normal personality characteristics. We also found evidence that the personality dimensions of psychopathy are related to other individual difference measures and outcomes of interest in a coherent and relatively consistent fashion and show replicable developmental trends during the transition to adulthood. All told, these insights may bring together researchers who share common interests in both normal and abnormal aspects of personality and adds to the growing literature on the nomological network of self-reported psychopathic traits.

Appendix 1

Correlation Matrix for PPI-R Scale and MPQ-Based Measures from Study 1 (N = 304)

	1	2	3	4	5	6	7	8	9	10
1. RN	1.000									
2. BE	.319	1.000								
3. ME	.449	.436	1.000							
4. CN	.396	.257	.351	1.000						
5. STI	.248	−.136	.068	.234	1.000					
6. SOI	.251	−.086	.258	.046	.383	1.000				
7. F	.536	.096	.285	.244	.372	.264	1.000			
8. C	.203	.132	.336	.470	.431	.088	.157	1.000		
9. FD	.306	−.173	.152	.060	.495	.602	.509	.132	1.000	
10. IA	.604	.624	.531	.445	.045	.024	.331	.188	.031	1.000
Mean	2.066	2.175	2.299	2.634	2.808	2.901	2.508	2.758	2.669	2.056
SD	0.496	0.542	0.419	0.552	0.538	0.384	0.586	0.589	0.370	0.351

Note: RN = Rebellious Nonconformity (PPI: Impulsive Nonconformity); BE = Blame Externalization; ME = Machiavellian Egocentricity; CN = Carefree Nonplanfulness; STI = Stress Immunity; SO = Social Influence (PPI: Social Potency); F = Fearlessness; C = Coldheartedness; FD = MPQ-Based Fearless Dominance; IA = MPQ-Based Impulsive Antisociality.

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Table 1

Correlations between the MPQ-Based Measures of Psychopathy and the Psychopathic Personality Inventory-R (Study 1)

	MPQ-Based Scales		***Psychopathic Personality Inventory-Revised Scales***		
	FD	**IA**	**FD**	**IA**	**Coldheartedness**
PPI-R Scales					
FD	**.72**	.18	-	-	-
IA	.12	**.76**	.31	-	-
Coldheartedness	.13	.19	.30	.40	-
LSRP					
Total	.05	.61	.24	.69	.46
Primary	.13	.49	.31	.58	.52
Secondary	−.13	.61	.03	.61	.18

Note: FD = Fearless Dominance. IA = Impulsive Antisociality. All correlations above |.13| are significant at $p < .01$.

Table 2

Associations between MPQ-Based Psychopathic Traits and Measures of Normal and Maladaptive Personality Traits (Study 2)

	MPQ-FD	MPQ-IA
BIS/BAS		
BIS	−0.43	−0.15
BAS	0.49	−0.04
BAS Drive	0.38	0.02
BAS Fun Seeking	0.50	0.14
BAS Reward Responsiveness	0.23	−0.23
Big Five Traits		
Extraversion	0.57	−0.11
Agreeableness	0.08	−0.35
Conscientiousness	0.02	−0.48
Neuroticism	−0.43	0.28
Openness	0.27	−0.04
Measures of the Dark Triad		
Psychopathy (Total SRP-III)	0.22	0.75
Interpersonal Manipulation	0.24	0.61
Callous Affect	0.17	0.60
Erratic Life Style	0.28	0.68
Criminal Tendencies	0.05	0.56
Machiavellianism	−0.04	0.46
Narcissism	0.50	0.18

Note: FD = Fearless Dominance, IA = Impulsive Antisociality. SRP-III = Self-Report Psychopathy Scale. All correlations above |.11| are significant at $p < .01$.

Table 3

Differential Stability and Absolute Changes in Fearless Dominance and Impulsive Antisociality From 1994 to 2003 (Study 3)

	Stability	1994		2003		
	Coefficient	*M*	*SD*	*M*	*SD*	*d*
Fearless Dominance						
Total	.52	.62	.18	.58	.19	−.22
Men	.38	.67	.17	.66	.18	−.06
Women	.56	.58	.18	.53	.18	−.28
Impulsive Antisociality						
Total	.50	.40	.19	.21	.15	−1.00
Men	.51	.47	.18	.26	.15	−1.17
Women	.41	.35	.18	.17	.13	−1.00

Note. Fearless Dominance and Impulsive Antisociality items are measured with dichotomous items and scores indicate the average number of items endorsed for each trait. The effect size was calculated by this formula *d* = (Mean Time 2 – Mean Time 1) divided by the Standard Deviation at Time 1.

Table 4

Criterion-Related Validity Information for Fearless Dominance and Impulsive Antisociality (Study 4)

	Fearless Dominance		Impulsive Antisociality	
	1994	**2003**	**1994**	**2003**
Externalizing Problems				
1994 Assessments				
Self-Reports of Delinquency	.13	.10	.43	.24
Self-Reports of Substance Use	.12	.08	.39	.23
Parent Reports of Externalizing Problems	.11	.08	.38	.19
2003 Assessments				
Self-Reports of Deviant Behavior	.06	.06	.21	.34
Self-Reports of Substance Use	.10	.18	.22	.34
Partner Reports of Deviant Behavior	.09	.13	.08	.22
Partner Reports of Substance Use	.04	.06	.20	.29
Internalizing Problems				
1994 Assessments				
Self-Reports of Depression	−.39	−.23	.24	.16
Self-Report of Anxiety	−.25	−.14	.25	.17
Self-Reports of Hostility	−.13	−.08	.43	.24
Parent Reports of Internalizing Symptoms	−.17	−.12	.20	.17
2003 Assessments				
Self-Reports of General Distress	−.24	−.32	.04	.31
Self-Reports of Anhedonic Depression	−.27	−.46	.11	.27
Self-Reports of Anxious Arousal	−.10	−.15	.13	.31
Partner Reports of General Distress	−.09	−.22	.00	.06
Partner Reports of Anhedonic Depression	−.12	−.24	.07	.15
Partner Reports of Anxious Arousal	−.02	.04	.12	.03

Note: All coefficients > |.13| were significant at $p < .01$. Regression analyses controlling for the minimal overlap between IA and FD yielded similar coefficients.

Table 5

Average Levels of Fearless Dominance and Impulsive Antisociality in Disordered Groups Relative to Controls (Study 4)

	Controls		ASPD/CD		Substance Dependence		Effect Sizes for Contrasts	
	M	***SD***	***M***	***SD***	***M***	***SD***	**ASPD**	**Substance Dependence**
Fearless Dominance								
1994	.05	.95	−.14	.94	.36	.79	−.21	.33
2003	−.01	.93	.07	1.14	.38	1.00	.09	.41
Impulsive Antisociality								
1994	−.29	1.01	.71	.69	.51	.78	.97	.79
2003	−.31	.84	.62	1.04	.47	1.09	1.04	.83

Note: FD and IA scores were standardized. Effect sizes were *d*-metric differences such that positive numbers indicates that the disordered group scored higher than the control group.