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# The P-psychopathy continuum: Facets of Psychoticism and their associations with psychopathic tendencies

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ABSTRACT

Eysenck proposed that psychopathy is at the extreme end of the Psychoticism (P) personality dimension (Eysenck & Eysenck, 1976). This study examined (i) whether psychopathy-relevant P items of the EPQ-R can form psychometrically valid facets that map onto the conceptualization of the two-, three- or four-factor models of psychopathy using confirmatory factor analysis ($N = 577$) in a normal population; and (ii) whether those P-facets have criteria-related validity in associations with self-reported primary and secondary psychopathy, impulsivity (subsample $N = 306$), and measures of trait empathy and aggression (subsample $N = 212$). The four-factor model incorporating affective, interpersonal, impulsive, and antisocial facets of P was superior to the two-factor model; however, the three-factor conceptualization excluding the antisocial P-facet was the best fit. The facets show predicted divergent associations with primary and secondary self-reported psychopathy and trait measures. Findings are discussed in light of Eysenck's P-psychopathy continuity hypothesis and the applicability of facet approaches to the prediction of psychopathic and antisocial tendencies.



## 1. Introduction

A growing literature conceptualizes psychopathy at the extreme end of a continuum along normal personality functioning (Edens, Marcus, Lilienfeld, & Poythress, 2006). Accordingly, assessments of levels of psychopathic traits in abnormal and normal populations may be appropriate to study psychopathy fully (Hare & Neumann, 2008). Eysenck's continuity hypothesis states that psychopathological disorders represent extreme ends of normal personality, with Psychoticism (P) proposed as a predisposition to criminality, psychopathy and schizophrenia (Eysenck & Eysenck, 1976). Individuals scoring high on P are impersonal, emotionally indifferent, and lacking empathy and remorse. Their behavioral deficits are reflected in impulsivity, recklessness, and antisociality (Eysenck, 1992). Whilst the P-continuity hypothesis for schizophrenia has been directly tested across normal, forensic, and clinical populations (Eysenck, 1992; but see also Van Kampen, 1993), the P-psychopathy relationship has not been investigated to the same extent and little is known of the role of P in predicting psychopathic tendencies in normal populations (Lynam & Derefinko, 2006). Nevertheless, high levels of P have been linked to deficits similar to those seen in psychopathic populations (Corr, 2010). Moreover, it has been suggested that P may be multidimensional, comprising facets that assess variants of psychopathic tendencies, for example, primary and secondary psychopathy (Heym, 2009 in Corr, 2010). However, to date, no work has examined the structure of P in relation to psychopathy. Therefore, the aims of the current paper are to (i) identify P-facets that map onto the three main factor models of psychopathy; and (ii) examine the associations of P-facets with self-reported psychopathy and psychopathy-related traits (empathy, impulsivity, and aggression) in normal populations.

### 1.1. Psychopathy and its components

Psychopathy is a disorder broadly associated with reduced affective capacity and impaired behavioral control (Hare, 2003). Three main models of psychopathy have been offered. First, the two-factor model proposes primary and secondary psychopathy variants with distinct trait correlates, mechanisms, and etiologies (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). Primary psychopathy is associated with deficits in *affective-interpersonal style* – including superficial charm, callousness, lack of empathy and guilt. Secondary psychopathy is defined by *unstable and antisocial behavior*, associated with impulsivity, recklessness and aggression. This structure has been supported by factor analytic studies of the Psychopathy Checklist-Revised (PCL-R; Hare et al., 1990) and self-reported psychopathy in non-clinical/non-criminal populations (Levenson, Kiehl, & Fitzpatrick, 1995).

Second, Hare (2003) proposed a four-factor model of the PCL-R, dividing primary psychopathy into (i) deficits in affective (e.g.,

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callous affect) and (ii) interpersonal style (e.g., manipulation); and secondary psychopathy into (iii) impulsive/unstable (e.g., irresponsibility) and (iv) antisocial lifestyle (e.g., criminal behaviors). Third, Cooke and Michie (2001) proposed a three-factor model excluding the antisocial lifestyle items from secondary psychopathy. Subsequently, whether the fourth PCL-R factor should be conceived as a central component of psychopathy or merely as an outcome measure of the other psychopathic traits is debatable (Hare & Neumann, 2010; Skeem & Cooke, 2010). Findings have demonstrated support for the three- and four-factor models over the two-factor model in adolescent offenders, but the debate on the structure of psychopathy between three and four factors hinges on researchers' conceptualization of the construct (Jones, Cauffman, Miller, & Mulvey, 2006); therefore, the current study will examine all three proposed models of psychopathy.

### 1.2. The P-psychopathy continuity hypothesis

P has been associated with various affective, cognitive and behavioral deficits as seen in primary and secondary psychopathy (Corr, 2010). For instance, P-associated reduced affective empathy (Richendoller & Weaver, 1994), guilt and remorse (Fox, De Koning, & Leicht, 2003) is akin to the conceptualization of primary psychopathy, whereas P-related impulsivity and antisocial style (Eysenck, 1992) are akin to secondary psychopathy. However, previous research found associations of P only with overall and secondary psychopathy in male prison inmates (Hare, 1982; Shine & Hobson, 1997), and it was argued that P may only reflect antisocial aspects of secondary psychopathy (Hare, 1982). However, Heym and Lawrence (2010) showed that raised levels of P in normal populations were associated with reduced anxiety and punishment sensitivity – a hallmark of primary psychopathy, *and* increased impulsivity similar to secondary psychopathy; suggesting that P taps into aspects of both primary and secondary psychopathy in normal populations. Such inconsistent findings may be explained by a multi-faceted nature of P.

### 1.3. Multi-faceted nature of P

In the EPQ-R (Eysenck, Eysenck, & Barrett, 1985), P items are associated with a wide range of traits tapping into the different psychopathologies along the continuum. Consequently, the P scale contains items unrelated to the conceptualization of psychopathy. Recent studies have found up to twice the prediction of variance in antisocial behavior using a facet rather than domain approach, arguably because conceptually relevant facets may have higher criteria-related validity than the broader personality dimensions due to primary trait specific variance they carry (Levine & Jackson, 2004; Paunonen & Ashton, 2001). Therefore, identifying psychopathy-specific facets of P may be more useful in examining affective, cognitive and behavioral deficits in primary and secondary psychopathic tendencies.

### 1.4. Aims and hypotheses

This study identifies and evaluates facets of P in the EPQ-R that map onto the two-, three-, and four-factor models of psychopathy and examines their validity (i) in terms of the associations with self-reported psychopathy, trait empathy, impulsivity, sensation seeking, and aggression in normal populations; and (ii) by comparing associations of both P and psychopathy with impulsivity and sensation seeking. Although there are already various self-report measures of psychopathy (Hicklin & Widiger, 2005), many studies, particularly large cohort studies, do not use those, but *do* employ the EPQ-R to assess general personality. Thus, identifying these P-facets would not only address the P-psychopathy continuity hypothesis from a theoretical perspective, but permit the examination of more specific psychopathic traits in such studies.

To examine the association of P-facets with self-reported psychopathy, the current study uses the Levenson Self-Reported Psychopathy Scale (LSRP; Levenson et al., 1995) as a criterion measure. The LSRP has been used extensively to examine psychopathic tendencies in normal populations and has construct validity with the PCL-R in offenders (Poythress et al., 2010). It is hypothesized that the P-facets will map onto the primary and secondary LSRP factors.

Impulsivity and sensation seeking have been associated with Psychoticism and secondary psychopathy (Eysenck & Eysenck, 1976; Skeem et al., 2003). Therefore, it is hypothesized that the secondary facets of P and self-reported secondary psychopathy are more strongly linked to measures of impulsivity and sensation seeking.

Deficits in affective empathy form a central concept in primary psychopathy (Hare, 1998) and similarly reduced empathetic responsiveness is linked to high P scorers (Richendoller & Weaver, 1994). It is therefore hypothesized that the primary facets of P will be negatively associated with affective empathy.

While secondary psychopathy is associated with impulsive-reactive aggression, driven by affective (anger) and cognitive (hostility) aggression components, primary psychopaths exhibit greater levels of instrumental aggression (Hart & Hare, 1997). Therefore, whilst both primary and secondary facets of P are expected to be associated with overt (verbal and physical) trait aggression, only secondary facets of P will be more specifically associated with affective and cognitive aggression.

## 2. Method

### 2.1. Participants

In total, 577 undergraduates were recruited from the University of Nottingham via lectures and a participant pool (mean age = 20.69; SD = 3.45; 390 females/158 males; 29 not specified). This full sample was used for the factor analysis of the P items. A sub-sample of 306 undergraduates (mean age = 19.66; SD = 2.34; 225 females/51 males; 30 not specified) completed the self-reported psychopathy and impulsivity measures. A second sub-sample of 212 undergraduates (mean age = 21.58; SD = 3.97; 134 females/78 males) completed measures of trait aggression and empathy. The study was approved by the Ethics Committee.

### 2.2. Measures

*EPQ-R P scale* (Eysenck et al., 1985) comprises 32-items with yes/no answer format. The P scale tends to have low reliabilities ($\alpha$ = .36–.91; Caruso, Witkiewitz, Belcourt-Dittloff, & Gottlieb, 2001), but shows good psychometric properties (Barrett, Petrides, Eysenck, & Eysenck, 1998).

*Levenson Self-Reported Psychopathy Scale* (LSRP; Levenson et al., 1995) was used to assess primary psychopathy and secondary psychopathy scored on a Likert-type scale (1 = *disagree strongly*, 5 = *agree strongly*). Levenson et al. (1995) reported reliabilities of .82 for the primary scale and .63 for the secondary scale, and it has been found to correlate with the PCL-R (Brinkley, Schmitt, Smith, & Newman, 2001).

*IPIP Impulsive Recklessness Scale* (IPIP-IMP; Goldberg et al., 2006) was used to assess trait impulsivity scored on a Likert-type scale (1 = *very true for me*; 4 = *very false for me*). This scale has good reliability ($\alpha$ = .72; Goldberg et al., 2006).

*Impulsive-Sensation Seeking* (ImpSS) was assessed using the Zuckerman–Kuhlman Personality Questionnaire (ZKPQ-III;