



## Locating psychopathy within the domain space of personality pathology

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### ABSTRACT

A robust literature demonstrates that psychopathology and personality pathology are well-represented within quantitatively-derived, hierarchical dimensional models. Nevertheless, the location of core traits comprising psychopathic personality (psychopathy) as defined by the triarchic model has not been clearly explicated. We extended hierarchical structural models of personality pathology to include triarchic psychopathy trait dimensions (*boldness, meanness, disinhibition*) to interface the hierarchical framework of pathological personality dimensions with basic psychopathy trait dimensions. Using data from a racially diverse undergraduate sample ( $N = 749$ ), “bass-ackwards” analyses revealed a coherently organized hierarchical structure of personality pathology. Psychopathy dimensions were clearly situated within levels of the hierarchy extending beyond the highest, undifferentiated general-factor level. A broad externalizing factor emerged at level 2, which bifurcated into callous-disinhibition and fearless dominance subfactors at level 3 – encompassing psychopathic traits of meanness and disinhibition (thought to represent the trait commonality between antisocial personality disorder and psychopathy) and boldness (thought to differentiate psychopathy from antisocial personality disorder), respectively, at the final two levels of the hierarchy. These results position triarchic psychopathy traits within an extended externalizing spectrum that accommodates boldness-related content.

### 1. Introduction

The Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5; American Psychiatric Association, 2013) includes an Alternative Model for Personality Disorders (AMPD), which characterizes personality disorders as constellations of pathological dispositional traits within a dimensional framework. This model was developed to address the limitations of traditional categorical models, such as arbitrary diagnostic thresholds, high rates of comorbidity, and disorder heterogeneity (Widiger & Trull, 2007). The AMPD, situated in Section III of DSM-5, comprises five higher-order personality domains encompassing 25 lower-order trait facets (APA, 2013; Krueger, Derringer, Markon, Watson, & Skodol, 2012). Although it contains a psychopathy (“with psychopathic features”) specifier for antisocial personality disorder (ASPD), the traits comprising core facets of psychopathy according to the triarchic model have not been adequately explicated within the AMPD domain hierarchy. The current work was undertaken to characterize how triarchic psychopathy dimensions fit

within the hierarchical structure of pathological personality traits.

#### 1.1. The shared structure of personality & psychopathy

Criterion B of the AMPD characterizes personality disorders in terms of pathological traits within five broad domains: *Negative Affect, Detachment, Antagonism, Disinhibition, and Psychoticism* (Zimmerman, Kerber, Rek, Hopwood, & Krueger, 2019). The Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012) operationalizes these traits via 25 scales organized into these five domains. Factor analytic work has demonstrated a hierarchical structure of the AMPD traits as assessed by the PID-5, in which a general factor emerges at the first level, which subdivides into internalizing and externalizing factors at level 2, then into lower-order factors reflecting the five AMPD domains (Wright et al., 2012).

Insofar as its domain factors reflect maladaptive variants of the Five Factor Model [FFM]/Big Five (Wright et al., 2012) the similarity between the hierarchical structure of the AMPD and that of the FFM

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indicates important commonalities between the maladaptive trait domains of the AMPD (Wright et al., 2012; Wright & Simms, 2015) and those of normative and other personality pathology models (Markon, Krueger, & Watson, 2005; Thomas et al., 2013). Vis-à-vis normative FFM trait domains (e.g., Miller, Sleep, & Lynam, 2018), AMPD negative affectivity parallels neuroticism, detachment parallels [reversed] extraversion, antagonism parallels [reversed] agreeableness, and disinhibition parallels [reversed] conscientiousness. In turn, the hierarchical structure of the AMPD domains (Wright et al., 2012; Wright & Simms, 2015) resembles that of psychopathology (Kotov et al., 2017). The emergence of these dimensions, as well as the well-replicated internalizing and externalizing dimensions across models, affords a framework in which personality traits and psychopathology can be integrated.

### 1.2. Hierarchical models as integrative frameworks

A growing consensus supports the view that competing models of dispositional characteristics can be synthesized into a multilevel hierarchical structure. Recent work has converged on a hierarchy that integrates two-, three-, four-, and five-factor structures of psychopathology and personality/temperament domains (e.g., Forbes et al., 2017; Wright & Simms, 2014). The joint hierarchical structure of clinical disorders and personality have been explicated using a “bass-ackwards” analytic approach (Goldberg, 2006) in which principal components are sequentially extracted starting from the top of the hierarchy (Forbes et al., 2017; Kotelnikova, Weaver, & Clark, 2019). Consistent with the aforementioned literature, studies of this kind have identified a higher-order general factor, core dimensional spectra, and their narrower components. This hierarchy can be used as an integrative and transdiagnostic framework to facilitate psychopathology research with varying levels of specificity. We applied the bass-ackwards, hierarchical analytic approach to characterize the multilevel structure of psychopathy traits in relation to other personality dimensions.

### 1.3. Psychopathy

As conceptualized by Cleckley (1941), psychopathy is characterized by behavioral deviance and callousness, co-existing with a superficial appearance of normality, reflecting a “mask” of outward charm and calm. This conceptualization is effectively represented in instruments that assess psychopathy in terms of separate components rather than unidimensionally. To accommodate this multidimensionality, Patrick, Fowles, and Krueger (2009) proposed the triarchic model, which characterizes psychopathy in terms of three constructs – meanness, disinhibition, and boldness – with referents in the literatures on personality, psychopathology, and neurobiology. Meanness reflects deficient empathy, aggressiveness, and selfish exploitativeness; disinhibition reflects deficient impulse control; and boldness reflects high social dominance and low stress reactivity. The AMPD psychopathy specifier for ASPD maps empirically onto the boldness dimension (Anderson, Sellbom, Wygant, Salekin, & Krueger, 2014), which reflects features of the aforementioned “healthy mask” component of psychopathy (Crego & Widiger, 2016), and has been shown to differentiate psychopathy from ASPD (Venables, Hall, & Patrick, 2014). The AMPD specifier indexes boldness through traits of low anxiousness, which maps partly onto stress immunity/emotional stability, and high attention-seeking and low withdrawal, which jointly capture a socially potent (assertive/dominant) interpersonal style.

In contrast, ASPD captures the aggressive/antagonistic (mean) and disinhibitory features of psychopathy but includes limited representation of the social adeptness and unemotionality features – which the AMPD specifier was designed to provide. The inclusion of distinct dispositional elements in the AMPD conceptualization of ASPD (i.e., features associated with trait domains of antagonism and disinhibition, along with specifier traits indicative of boldness) accords with the

growing recognition of the need for multidimensional measures of psychopathy that include representation of distinguishable facets such as antagonism versus emotional insensitivity. For example, the Inventory of Callous-Unemotional traits (ICU; Frick, 2004), developed as a downward extension of the psychopathy construct to youth, includes three factors: callousness (exploitativeness and low empathy), uncaring (lack of concern about performance or others' wellbeing), and unemotional (lack of affective expressivity; Waller et al., 2015). It is important to consider how separable psychopathy-relevant traits, as represented in the triarchic model—including traits reflecting unemotionality and detachment from others—relates to the maladaptive personality traits of the AMPD.

In light of these considerations, recent studies have sought to situate psychopathy within AMPD traits, bridging DSM-5 characterized psychopathy with other established psychopathy measures (Drislane et al., 2019). These efforts parallel other work undertaken to characterize facets of psychopathy described by the triarchic model in normative FFM-trait terms (e.g., Drislane, Brislin, Jones, & Patrick, 2018; Poy, Segarra, Esteller, López, & Moltó, 2014). This work has shown that (1) boldness relates to high FFM Extraversion and low Neuroticism, and to a lesser extent low Agreeableness, (2) meanness relates most to low Agreeableness, with lesser elements of low Extraversion and Openness; and (3) disinhibition is associated most strongly with low Conscientiousness and high Neuroticism and some elements of low Agreeableness. Given that the AMPD domains resemble maladaptive variants of the FFM traits, these findings provided a basis for hypotheses regarding how psychopathy dimensions may align with personality dimensions represented in the hierarchical structure of the AMPD.

### 1.4. Current study

Considering the hierarchical nature of both personality and psychopathology, and evidence for a joint hierarchical framework, we aimed to integrate subdimensions of psychopathy within the hierarchical structure of pathological personality trait dimensions. Specifically, we extended structural models of personality pathology to include widely studied psychopathy dimensions that have historically been excluded from these structural models. To do so, we used the bass-ackwards approach (Goldberg, 2006), a top-down technique for characterizing hierarchical factor structures in which orthogonal principal components are sequentially extracted at levels of the emergent hierarchy, mapping indicators in multidimensional space (Forbes et al., 2017).

Based on previous studies of the AMPD domain hierarchy (e.g., Wright et al., 2012), we hypothesized that a five-factor model reflecting the AMPD domains would best fit data and that the factors of this model would emerge out of two broader factors reflecting well-replicated internalizing and externalizing dimensions of psychopathology. Regarding psychopathy subdimensions, we hypothesized that triarchic disinhibition and meanness would subdivide from broad externalizing, with disinhibitory-related content expected to cohere and persist within a cohesive factor at the final five-factor level. Considering the multidimensionality of triarchic meanness and the ICU, we hypothesized that meanness-related content would differentiate into factors resembling antagonism (encompassing indicators related to callous and uncaring constructs) and detachment (encompassing scales related to unemotionality). Additionally, we predicted that boldness would cross-load within both the broad internalizing and externalizing spectra given its constituent elements of high social dominance, low neuroticism, and fearlessness (Lilienfeld, Watts, Smith, & Lutzman, 2018; Poy et al., 2014; Yancey, Bowyer, Foell, Boot, & Patrick, 2019). Lastly, with respect to subfactors of externalizing, we expected that triarchic boldness would differentiate the disinhibition-related factor and both meanness-related factors (i.e., antagonism and detachment).

## 2. Methods

### 2.1. Participants

Participants were 749 undergraduates ( $M_{\text{age}} = 21.01 \pm 4.81$ ; 74.9% female) at a large Southeastern public university. Participants were racially diverse, with 38.2% self-identifying as African-American/Black, 30.3% as White, 15.6% as Asian/Asian-American, and 15.9% as Biracial/Other. Participants were recruited through the university's research study pool and awarded course credit for their participation. All data were collected electronically during a single session.<sup>1</sup>

### 2.2. Measures

#### 2.2.1. Personality pathology

**2.2.1.1. Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012).** The PID-5 is a 220-item broad-bandwidth inventory of diverse maladaptive personality facets. The PID-5 encompasses 25 hierarchically-arranged facet scales organized into five broader domains: negative affect, detachment, antagonism, disinhibition, and psychoticism. Internal consistencies (Cronbach's alphas) in the current sample ranged from 0.64 (Suspiciousness) to 0.95 (Eccentricity).

#### 2.2.2. Psychopathic personality dimensions

**2.2.2.1. Psychopathic Personality Inventory – Triarchic scales (PPI-Tri).** The PPI-Revised is a 154-item inventory of personality domains relevant to psychopathy (Lilienfeld & Widows, 2005), from which Hall et al. (2014) developed item-based scales to index the broad trait constructs of the triarchic model (Patrick et al., 2009). The PPI-Boldness scale comprises 20 items, PPI-Meanness 26 items, and PPI-Disinhibition 20 items. These PPI-Tri scales demonstrate validity in terms of theory-consistent relations with criterion measures of various types (e.g., Hall et al., 2014; Sellbom, Wygant, & Drislane, 2015) and structural-equation-model convergence with other validated measures of the triarchic trait constructs (e.g., Drislane et al., 2018; Drislane & Patrick, 2017). Scales used in the current work provide an effective representation of the three triarchic model constructs in our modeling analyses. In the current sample, internal consistencies were 0.73, 0.83, and 0.78, for Boldness, Meanness, and Disinhibition, respectively.

**2.2.2.2. Inventory of Callous-Unemotional Traits (ICU; Frick, 2004).** The ICU is a 24-item self-report scale, designed to measure the intensity and severity of CU traits. Research supports the multidimensional nature of the ICU, encompassing callous, uncaring, and unemotional subscales (Waller et al., 2015) and was thus included to allow examination of unemotional/detachment-related content of potentially separable triarchic meanness/antagonism and disinhibition dimensions. In the current sample, internal consistencies were .82, 0.84, and 0.75 for the Callousness, Uncaring, and Unemotional subscales, respectively.

### 2.3. Data analysis

Using the bass-ackwards approach, the 25 PID-5 facets, three PPI-Tri dimensions, and three ICU scales were simultaneously subjected to a series of principal components analyses (PCAs) to investigate the placement of psychopathy dimensions within a joint hierarchical structure of personality/psychopathology at differing levels of the hierarchy. Specifically, a series of orthogonally-rotated (varimax) PCAs were performed in an iterative manner extracting, first, one principal

<sup>1</sup> To determine the effects of careless or inattentive responding, we computed scores on the PPI-R Deviant Responding and 40-item Inconsistent Responding scales (Lilienfeld & Widows, 2005). After removing protocols with scores greater than two standard deviations above the mean on either of these scales ( $n = 25$ ), we re-conducted all analyses. Results remained virtually identical.

component from all items to represent the first level of the hierarchy, followed by two principal components, and then three, and so on. To examine how lower levels of the hierarchy emerged from higher levels, regression-based factor scores were saved from each level of the personality hierarchy and examined for intercorrelations across levels. Based on this approach, we constructed a hierarchical structure of personality/psychopathology by using the correlations as path estimates between each subsequent level of the hierarchy and the preceding level. This approach has been successfully used for similar investigations (e.g., Forbes et al., 2017; Kotelnikova et al., 2019).

Our dataset and syntax files are publicly available at <https://osf.io/spufc/>.

## 3. Results

### 3.1. Preliminary structural analyses

To determine the number of factors to extract, we conducted a parallel analysis (Horn, 1965), which suggested that a five-factor solution best fit the data (see Supplemental materials). We thus extracted up to five factors in our hierarchy.

### 3.2. Hierarchical structure of personality pathology

Results of PCAs integrating the PID-5, PPI-Tri, and ICU scales provide support for the hierarchical structure of personality pathology. As shown in Fig. 1, the two-factor level appears to describe Internalizing and Externalizing dimensions. The Internalizing factor was anchored by PID-5 facets including Perseveration, Anxiousness, Emotional Lability, Distractibility, and Depressivity. The Externalizing factor was anchored by scales including PID-5 Callousness, PPI-Tri Meanness, ICU Callousness, PID-5 Deceitfulness, and PPI-Tri Disinhibition. Additionally, although not one of the highest loadings, PPI-Tri Boldness exhibited a moderate positive loading on the Externalizing factor (0.41) as well as a moderate negative loading on the Internalizing factor ( $-0.33$ ).

At the three-factor level, a Negative Affectivity factor emerged from Internalizing and two factors, termed Callous Disinhibition and Fearless Dominance, emerged from the Externalizing factor. Specifically, Callous Disinhibition was anchored by PID-5 Callousness, PPI-Tri Meanness, ICU Uncaring, PID-5 Anhedonia, and ICU Callousness, whereas Fearless Dominance was anchored by PID-5 Attention Seeking, PID-5 Risk-Taking, PID-5 Manipulativeness, PPI-Tri Boldness, and PID-5 Impulsiveness. We labeled the Callous Disinhibited factor as such given the similarity with factor-analytic work situating callous-aggression within the externalizing spectrum (Krueger, Markon, Patrick, Benning, & Kramer, 2007), as well as the consideration of antagonistic externalizing within the hierarchical structure of psychopathology (Kotov et al., 2017). We termed the second dimension Fearless Dominance as a link to the fearless-dominance factor within the PPI model, which encompasses fearlessness, social influence, and low trait anxiety (Lilienfeld & Widows, 2005).

At level four, the Negative Affectivity and Fearless Dominance factors found at the three-factor level persisted; however, Callous Disinhibition differentiated into an Antagonistic Externalizing factor and a Detachment factor. Antagonistic Externalizing was anchored by loadings from ICU Uncaring, PPI-Tri Meanness, PPI-Tri Disinhibition, PID-5 Irresponsibility, and ICU Callousness, whereas Detachment was anchored by loadings from PID-5 Restricted Affect, ICU Unemotional, PID-5 Withdrawn, and PID-5 Intimacy Avoidance.

Lastly, as shown in Table 1, at the five-factor level, in addition to Negative Affectivity, Antagonistic Externalizing, and Detachment factors that remained, Fearless Dominance differentiated into a Dominance factor and a Fearlessness factor. Dominance was anchored by the PID-5 facets Grandiosity, Manipulativeness, Attention Seeking, and Deceitfulness, whereas Fearlessness was anchored by PID-5 Risk-Taking, PPI-Tri Boldness, and PID-5 Impulsiveness. Results of 1- to 4-

**Table 1**

A 5-factor solution of the inventory for callous-unemotional traits, personality inventory for DSM-5, and triarchic construct scales from the psychopathic personality inventory scales.

Trait	Factor				
	Negative Affect	Antagonistic Externalizing	Dominance	Detachment	Fearlessness
<b>PID-5</b>					
Anhedonia	0.526	0.469	−0.020	<b>0.411</b>	−0.253
Anxiousness	<b>0.797</b>	−0.084	0.097	0.159	−0.167
Attention Seeking	0.286	0.037	<b>0.632</b>	−0.243	<b>0.322</b>
Callousness	0.239	0.679	<i>0.468</i>	0.271	0.081
Deceitfulness	0.341	<i>0.490</i>	<b>0.509</b>	0.139	0.196
Depressivity	<b>0.686</b>	<i>0.434</i>	0.075	0.289	−0.058
Distractibility	<b>0.789</b>	0.182	−0.016	0.143	0.154
Eccentricity	<i>0.666</i>	0.042	0.139	0.335	0.237
Emotional Lability	<b>0.789</b>	0.012	0.180	−0.153	−0.090
Grandiosity	0.150	0.272	<b>0.774</b>	0.067	−0.006
Hostility	<i>0.544</i>	0.226	<i>0.479</i>	0.171	0.115
Impulsivity	<i>0.500</i>	0.343	0.150	−0.024	<b>0.534</b>
Intimacy Avoidance	0.226	0.333	0.213	<b>0.485</b>	−0.186
Irresponsibility	<i>0.417</i>	<b>0.690</b>	0.171	0.049	0.138
Manipulativeness	0.191	0.206	<b>0.701</b>	0.155	<b>0.295</b>
Perceptual Dysregulation	<i>0.681</i>	0.329	0.245	0.224	0.159
Perseveration	<b>0.810</b>	0.155	0.235	0.117	0.009
Restricted Affectivity	0.161	0.094	0.274	<b>0.796</b>	0.162
Rigid Perfectionism	<i>0.464</i>	−0.178	<b>0.493</b>	0.218	−0.092
Risk Taking	0.055	0.201	0.095	0.021	<b>0.843</b>
Separation Insecurity	<i>0.671</i>	0.137	0.219	−0.165	−0.044
Submissiveness	<i>0.557</i>	−0.055	0.097	−0.012	−0.006
Suspiciousness	<i>0.498</i>	0.267	0.260	0.246	0.017
Unusual Beliefs & Experiences	<i>0.517</i>	0.229	<i>0.417</i>	0.198	0.202
Withdrawal	<i>0.504</i>	0.236	0.195	<b>0.598</b>	−0.212
<b>PPI-Tri</b>					
Boldness	−0.338	−0.035	0.313	0.083	<b>0.687</b>
Disinhibition	<i>0.418</i>	<b>0.704</b>	0.053	0.039	0.292
Meanness	−0.241	<b>0.794</b>	0.211	0.109	0.006
<b>ICU</b>					
Callousness	0.034	<b>0.686</b>	0.304	0.156	0.049
Uncaring	0.027	<b>0.790</b>	−0.117	0.063	0.074
Unemotional	−0.070	0.112	−0.144	<b>0.815</b>	0.095

Note: The five highest factor loadings for each factor are in boldface. Factor loadings  $\geq |0.40|$  that are not within the top five highest factor loadings are italicized. ICU = Inventory for Callous-Unemotional Traits (Frick, 2004). PID-5 = Personality Inventory for DSM-5 (Krueger et al., 2012). PPI-Tri = Triarchic Construct Scales from the Psychopathic Personality Inventory (Hall et al., 2014).

factor PCAs are provided in Tables 2–5 of the Supplemental Materials.

#### 4. Discussion

A converging literature has confirmed the hierarchical dimensional nature of psychopathology broadly, and personality pathology more specifically, showing clinical and personality disorder symptomatology to be organizable within a common framework (Conway, Lutzman, & Krueger, 2020; Forbes et al., 2017; Kotov et al., 2017). Although some research has considered how psychopathic features relate to traits of the AMPD, the current work addressed the unanswered question of the placement of core psychopathic trait dimensions, described by the triarchic model, within the levels of this hierarchical structure.

As others have recognized (Anderson et al., 2014; Few, Lynam, Maples, MacKillop, & Miller, 2015), the AMPD model is more efficient for representing ASPD and psychopathy due to its use of dimensional traits (as opposed to dichotomous) to characterize these clinical phenomena. As described previously (e.g., Lynam, 2010; Skeem, Polaschek, Patrick, & Lilienfeld, 2011), psychopathy is best understood as a constellation of trait dimensions. Positioning psychopathy within the AMPD-related hierarchy allows for the modeling of trait-related variance in common between ASPD and psychopathy (i.e., meanness- and disinhibition-related variance) while also capturing trait-related variance that differentiates the two (i.e., boldness-related variance).

Results from our analyses confirmed the hierarchical nature of personality pathology, with extracted dimensions generally aligning

with previously reported hierarchical structures (see Fig. 1). At the two-factor level, well-replicated dimensions reflecting Internalizing and Externalizing emerged, consistent with research that has examined clinical disorders, personality disorders, and both together. At this level of the hierarchy, all three psychopathy dimensions, assessed via PPI-based triarchic scales and subscales of the ICU, were located primarily within broad Externalizing; boldness also evidenced a modest negative cross-loading (−0.33) on Internalizing. At the 3-factor level, Externalizing bifurcated into a Callous Disinhibition factor and a Fearless Dominance factor. Callous Disinhibition further differentiated into Antagonistic Externalizing and Detachment at the 4-factor level, both of which carried through to the final 5-factor level. The Fearless Dominance factor observed at the 3-factor level was evident at the 4-factor level, and then split into distinct Dominance and Fearlessness factors at the final 5-factor level. Broad Internalizing, defined by scale measures of Negative Affectivity, remained intact across all levels of the hierarchy.

We found that subscales corresponding with triarchic meanness and disinhibition fit well within the Antagonistic Externalizing factor at levels 3 through 5 of the hierarchy. This finding is consistent with the assertion that antagonism represents the core of these dimensions of psychopathy (Lynam & Miller, 2019), as well as with the notion that ASPD reflects antagonistic externalizing (Patrick, 2010; Patrick, Edens, Poythress, Lilienfeld, & Benning, 2006; Venables et al., 2014). Despite previous findings of Detachment emerging from Internalizing (Wright et al., 2012), the emergence of Detachment from Externalizing in the

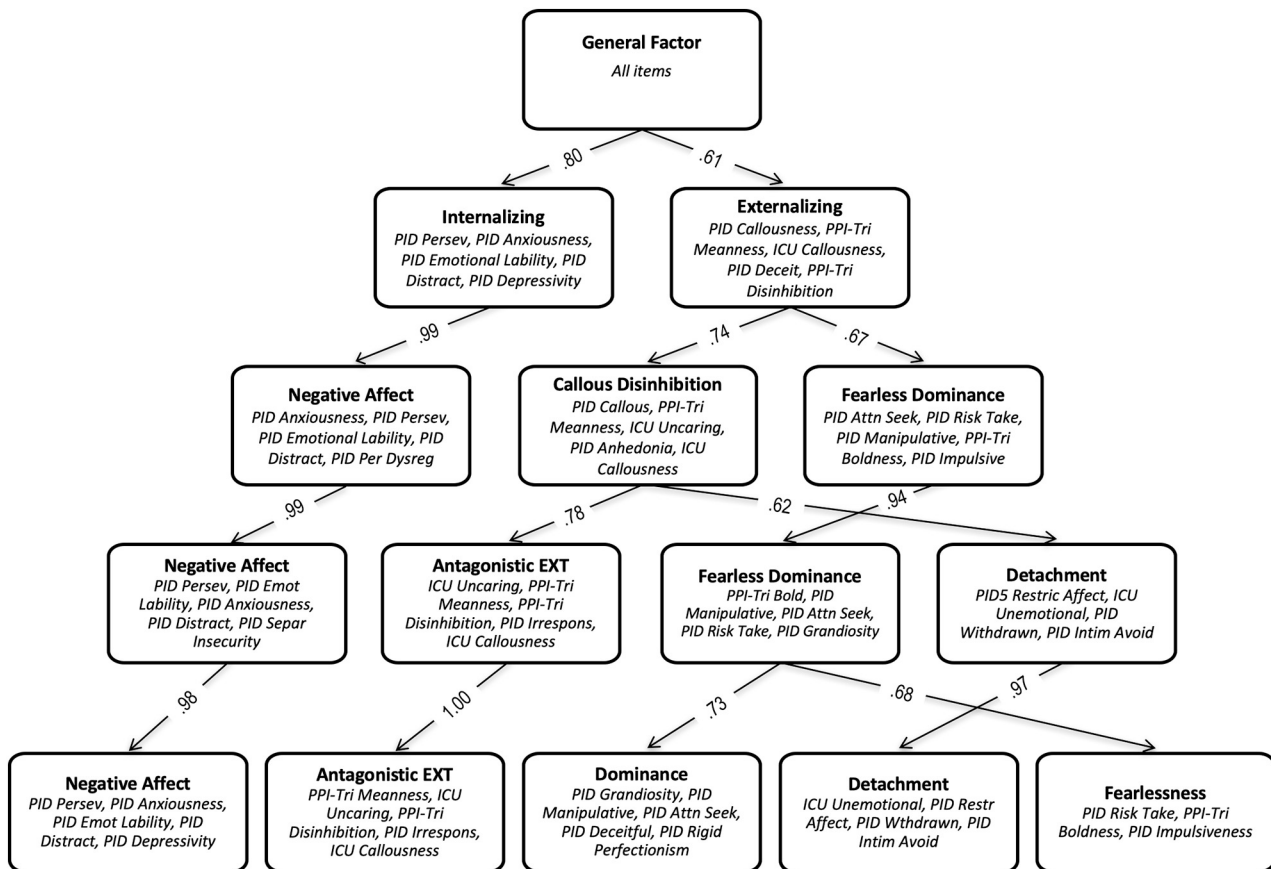


Fig. 1. Hierarchical Structure of Personality Pathology including Psychopathic Personality Dimensions. Note. Only paths > 0.30 shown. Anchor loadings for each factor shown.

current study may reflect over-representation of externalizing-related content given the focus on psychopathy. Indeed, previous hierarchical analyses in which externalizing-related content was over-represented have resulted in similar unexpected findings (Conway et al., 2020).

Notably, the emergence of independent Detachment and Antagonistic Externalizing factors points to a partitioning of meanness-related variance contained within the Callous Disinhibition factor. Specifically, the Detachment factor of the current study resembles the core unemotionality and social disaffiliation characteristic of meanness, whereas the Antagonistic Externalizing factor reflects an aggressive lack of control. The emergence of this factor, however, is indicative of important differences in the emotional qualities of ASPD and psychopathy, despite the aggressive and disinhibitory features they share. Whereas ASPD is typically associated with heightened emotional reactivity, the resulting Detachment factor, defined most strongly by scales including ICU Unemotional and PID Withdrawal, Restricted Affectivity, and Intimacy Avoidance, captures the deficient emotional sensitivity characteristic of psychopathy (Drislane et al., 2019).

Boldness fell within the broad Externalizing dimension at the 2-factor level and exhibited a moderate negative loading on the Internalizing dimension, suggesting that, at least within the personality pathology domain space, boldness can be considered a reflection of externalizing. Nonetheless, boldness emerged as separate from Antagonistic Externalizing at lower levels of the hierarchy, in terms of the Fearless Dominance factor at the 3-factor level which eventually differentiated into narrower Dominance and Fearlessness, loading more strongly on the latter.

The observed multidimensionality of boldness in our analysis fits with the triarchic model's description of this construct as encompassing distinct facets of social efficaciousness, low stress reactivity, and fearlessness (Patrick et al., 2009). Our findings are notable given that ASPD

as defined in DSM-5 – both the categorical diagnosis in Section 2, and the trait-dimensional (AMPD) characterization in Section 3 – is solely defined by features related to disinhibition and antagonism. The emergence of distinct dimensions reflecting boldness-related features in our analysis accords with evidence from other published work pointing to boldness as an important dispositional factor distinguishing psychopathy from ASPD (Venables et al., 2014; Wall, Wygant, & Sellbom, 2015; Crego & Widiger, 2016). Given that the current hierarchy points to boldness as deriving from the overarching Externalizing factor, consideration should be given to reconceptualizing the psychopathy specifier of ASPD as reflecting traits related to both (high) externalizing and (low) internalizing. At the same time, our findings do not directly address the controversial question of the centrality of boldness to psychopathy (e.g., Lilienfeld et al., 2016).

#### 4.1. Limitations

The current study has certain limitations. Given our reliance on an undergraduate sample, albeit one that was large and racially/ethnically diverse, further research is needed to evaluate the generalizability of our findings, particularly to samples with higher levels of clinical symptomatology. That being said, university students display sufficient variability in psychopathology to allow latent dimensions of common mental disorders to emerge (Auerbach et al., 2016; Conway, Tackett, & Skodol, 2017). The predominately female (74.9%) nature of our sample may further constrain the generalizability of our findings to the extent that lower levels of externalizing-related symptomatology occurring in women compared to men can affect the number and nature of factors extracted (Conway et al., 2020). Nonetheless, these concerns may be mitigated by epidemiological research demonstrating invariance of dimensional models of psychopathology across gender (Eaton et al.,

2012). Finally, as external criterion validity was not assessed, it will be important for future research to examine how dimensions at each level of the hierarchy relate to criterion measures of various types.

## 5. Conclusions

Our results provide novel evidence concerning the location of trait dimensions of psychopathy within the personality pathology hierarchy. We offer three take-home messages. First, all subdimensions of psychopathy as described by the triarchic model are situated within the Externalizing spectrum. Contrary to previous assertions (e.g., Sleep, Weiss, Lynam, & Miller, 2019), this broad spectrum encompasses boldness-related content that differentiates into Fearless Dominance, and then Dominance and Fearlessness at lower levels of the hierarchy. Second, consistent with research suggesting antagonism to be at their core, meanness and disinhibition are situated within the Antagonistic subdimension of Externalizing. Third, whereas meanness and disinhibition fall within Antagonistic Externalizing, ostensibly mapping largely onto ASPD-related content, boldness fits robustly within Fearlessness and Dominance. This finding buttresses the assertion that Antagonistic Externalizing alone is insufficient to differentiate psychopathy from ASPD; boldness-related content is essential.

## CRedit authorship contribution statement

**Robert D. Lutzman:** Conceptualization, Methodology, Formal analysis, Writing - original draft. **Kaitlyn E. Tobin:** Writing - original draft. **Isabella M. Palumbo:** Writing - original draft. **Christopher C. Conway:** Conceptualization, Writing - review & editing. **Scott O. Lilienfeld:** Conceptualization, Writing - review & editing. **Christopher J. Patrick:** Writing - review & editing. **Robert F. Krueger:** Conceptualization, Writing - review & editing.

## Declaration of competing interest

None.

## Appendix A. Supplementary data

Supplementary material can be found online at <https://doi.org/10.1016/j.paid.2020.110124>.

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