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Personality pathology grows up: adolescence as a sensitive period

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There is mounting evidence that personality pathology, in particular, borderline pathology is a valid and reliable construct in adolescence, with prevalence, phenomenology, stability and risk factors similar to that of adult borderline personality disorder. Scientific evidence also delineates a marked separation of course and outcome of adolescent borderline personality disorder from other disorders and supports the efficacy of disorder-specific treatment. The current article addresses recent findings in these areas which point to adolescence as a sensitive period for the development for personality pathology. A conceptual model of psychopathology is presented wherein personality pathology is described as a qualitatively different level of psychopathology in the form of maladaptive self-other relatedness that is developmentally tied to identity formation in adolescence.

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The lacuna in empirical research on the downward extension of personality pathology to adolescence is gradually being addressed with original data from several research groups. Most of this research has focused on Borderline Personality Disorder (BPD), and/or maladaptive traits associated with borderline pathology. Collectively, these studies report data in support of, first, borderline pathology as a valid and reliable construct in adolescence [1,2••,3], second, a genetic basis for adolescent BPD [4–6], third, similarity between adult and adolescent BPD in terms of prevalence, phenomenology, stability and risk factors [7–14], four, marked separation of course and outcome of adolescent BPD and other disorders [11,15], five, efficacy of disorder-specific treatment [16,17], six, similar levels (as for adults) of burden placed by the disorder on families and mental health service delivery system, in addition to personal suffering [18–21], and seven, similar rates of suicide [22] and self-harm [23] as reported for adults with BPD. The weight of this empirical evidence has led the DSM-5 and the U.K. [24] and Australian [25] national treatment guidelines to legitimize the diagnosis of BPD prior to age 18 and the acknowledgment that adolescent BPD constitutes a public health concern [26••]. Consistent with the scope of *Current Opinion* articles, we will not endeavor to review all of the above research, but wish to discuss four key findings that collectively point to adolescence as a sensitive period for the development of borderline personality pathology specifically, and personality pathology more generally. We feel confident in suggesting that conclusions drawn from the borderline literature may apply to personality pathology more generally, based on recent evidence demonstrating borderline pathology to represent core or shared features of personality pathology more generally ([27••,28]; see also in this special issue [29]).

Finding #1: Personality pathology onsets in adolescence

Uniquely designed to address questions about developmental trajectories, the Children in the Community Study (CIC) [30] was the first to establish the now well-accepted developmental trajectory for personality pathology. Specifically, personality pathology (measured in CIC following DSM-IV clusters with baseline assessment at age 9 followed by 4 timepoints, the last at age 22) appears to onset in early adolescence, peaks in mid-adolescence, and declines linearly thereafter. Despite the observed normative decline during early adulthood, 21% of the CIC sample showed *increased* personality pathology over adulthood, thereby deviating from the normative pattern of decline. This pattern was confirmed in more recent community-based studies of personality pathology. Taking a maladaptive trait perspective, De Clercq *et al.* [31] demonstrated that childhood maladaptive personality traits (disagreeableness, emotional instability, and compulsivity) declined over a 2-year follow-up period in young adolescents; however, this decline was less pronounced in adolescents with most elevated scores. Similarly, Wright *et al.* [32] demonstrated that maturation of basic personality traits (that is, increases in affiliation, conscientiousness, and openness, and decreases in neuroticism) was associated with a decline in personality disorder symptoms, while basic personality traits stagnated or regressed as personality disorder developed.

That a subgroup of adolescents appear to deviate from the normative decline in personality pathology with continued or persistently high levels of personality pathology raises the question whether these adolescents are above threshold for categorically defined personality disorder. In support of this idea, several studies using developmentally appropriate tools for diagnosing BPD have identified adolescents who meet full criteria in clinical samples amounting to 11% in outpatients [12], 33% [33], and 43–49%, in inpatients [34], as well as epidemiological samples, with rates around 3% in the U.K. [14], 1% in the U.S. [35,36], 2% in China [37], and cumulative prevalence at 3% [36], mirroring adult prevalence rates.

Finding #2: Personality pathology is moderately stable in adolescence

CIC was also the first to demonstrate stability coefficients for dimensionally defined personality pathology in the .4–.7 range typically observed for normal personality traits in adults and children [30]. The stability for CIC Cluster B personality pathology (borderline, narcissistic and histrionic) across 9 years was .63 and .69 in adolescent boys and girls, respectively. These findings mirror those of Bornovalova *et al.* [11] who showed a rank-order stability of .53–73 over a 10 year follow-up period for borderline symptoms in a community sample and Chanen *et al.* [12] who found a BPD stability index of .54 over a 2-year period in an outpatient sample. This means that adolescents' ranking among their peers in terms of personality pathology remains moderately (not highly) stable over time similar to adults. Less stable in both adolescents and adults is PD diagnosis [1]. Thus, contrary to the traditional view of personality pathology as persistent and permanently observable, high rates of remission and change have been reported for personality pathology similarly in adults and adolescents.

Two important points pertaining to stability and change in personality pathology should be noted. First, while BPD may remit, studies generally converge to suggest continued impaired functioning in social and occupational domains specific to personality pathology [21]. Using data from the Pittsburgh Girl Study, Wright *et al.* [38••] analyzed growth trajectories of concurrent borderline symptoms and social function controlling for internalizing and externalizing pathology and showed specific developmental associations of BPD with social skills, self-perception, and sexual activity beyond general associations with psychopathology. Similarly, in a clinical sample, Chanen *et al.* [15] demonstrated that BPD had explanatory value over and above other traditional Axis I disorders as well as other PDs in predicting current psychosocial functioning and Sharp *et al.* [39] demonstrated in an inpatient sample that BPD provided incremental predictive value for suicidal outcomes over and above internalizing pathology.

Second, while rank order stability for personality pathology is only moderate, personality pathology appears to be more stable than internalizing and externalizing pathology. For instance, in the CIC study [30], the stability of internalizing and externalizing symptoms were consistently lower than Cluster B symptoms, thereby supporting expectations that personality disorder symptoms should be more enduring than episodic disturbances normally associated with traditional Axis I disorders. Also in the PALS study [31], a steeper decline was observed for CBCL-externalizing problems as compared with personality pathology indices, suggesting, according to the authors, higher susceptibility of CBCL-measured externalizing problems to developmental maturation processes. Recently, Conway *et al.* [40] used trait-state occasion modeling to parse the more stable components of borderline pathology from less stable components. They found the latter to be no less stable than depression over time, thereby challenging prior findings that borderline features are more stable than internalizing problems. However, the SEM model used in this study specified self-harm, stress-linked paranoia, abandonment concerns, and identity disturbances as acute (state-like) symptoms of BPD and impulsivity, unstable relationships, chronic emptiness, and intense anger as trait-like. While there is some justification to specify the model as such, there is not consensus as to which borderline symptoms best represent trait vs. state-like features. For instance, the McLean Study of Adult Development [41] identifies paranoia, general impulsivity and abandonment fears as temperamental trait features, and not state-like features. In interpreting the Conway results, we are of the opinion that temperament should not be conceptually equated with personality; a point that has been made by several personality researchers (see for example [42]).

Finding #3: Personality pathology is preceded by internalizing and externalizing disorders

In a recent systematic review of the antecedents of borderline pathology in adolescents, Stepp *et al.* [43••] identified 16 prospective studies examining psychopathology as an antecedent of BPD. These studies provide unequivocal support for the idea that internalizing psychopathology (i.e. anxiety, depression, dissociation, suicide), predict later onset of BPD or at least increases in borderline symptoms during adolescents [44–52]. A similar pattern is reported for externalizing psychopathology (i.e. attention-deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder, substance use) [44–46,48,50,51,53–57]. While BPD is preceded by internalizing and externalizing pathology, the converse appears to be empirically unsupported as evidenced by two recent longitudinal studies [53,58]. Both these studies demonstrated that after accounting for cross-sectional relations and temporal stability between substance use problems and borderline features, the latter was not a causal antecedent to the former.

Finding #4: Personality pathology remains comorbid with internalizing and externalizing pathology throughout development

Not only are internalizing and externalizing pathology antecedents of adolescent borderline pathology as discussed above, but continue to be highly comorbid with personality pathology throughout development. Comorbidity studies in adolescents demonstrate that adult patterns are mirrored, ranging from 50% in the CIC [30] to 86% in a clinical sample [59,60]. Chanen *et al.* [15] demonstrated significantly higher rates of comorbidity in borderline adolescents compared to adolescents with either no personality disorder or no disorder. Ha *et al.* [33] reported rates of 70.6% for comorbid mood disorders in adolescent inpatients with BPD (vs. 39.2% in non-BPD psychiatric controls), 67.3% for anxiety disorders (vs. 45.5%), and 60.2% for externalizing disorders (vs. 34.4%). Adolescents with BPD also showed significantly higher scores on dimensional measures of internalizing and externalizing psychopathology compared to psychiatric controls and they showed significantly higher likelihood of meeting criteria for complex comorbidity as defined by Zanarini *et al.* [61] as having any mood or anxiety disorder plus a disorder of impulsivity. These findings are particularly intriguing given Eaton *et al.*'s [62] demonstration of factor loadings averaging .54 and .24 across male and female adults onto internalizing and externalizing latent factors, respectively. This suggests that while variability in BPD features is not fully accounted for by internalizing and externalizing pathology, BPD is not only developmentally preceded by internalizing and externalizing pathology [43••] but contains features of both types of pathology in adulthood. In addition, risk factors identified in CIC and other studies of BPD are strikingly non-specific to BPD. As suggested in Stepp *et al.*'s [43••] review of risk factors associated with BPD, previous research demonstrates a nearly identical risk profile for borderline pathology similar to a broad range of internalizing [63–65] and externalizing [66,67] disorders.

Summary of key findings

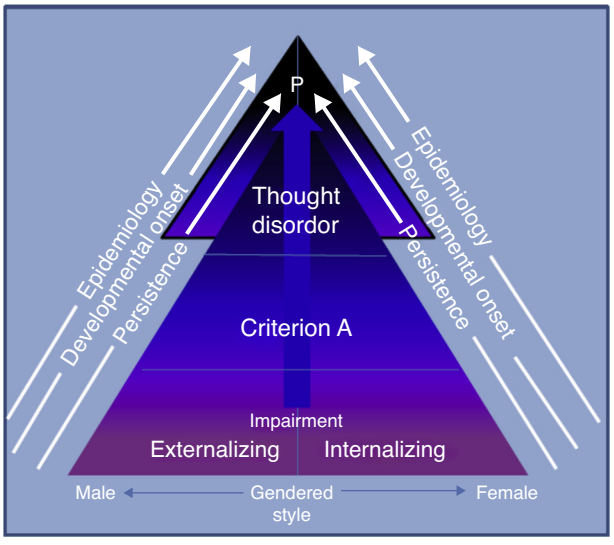
Empirical evidence supports the idea that borderline pathology onsets in adolescence. While some adolescents adhere to the normative decline in personality pathology through early adulthood, a proportion of adolescents' symptoms increase or stagnate. These are the adolescents who may meet clinical threshold for personality disorder categorically defined. Personality pathology, like adult personality pathology is moderately stable, and more stable than internalizing and externalizing pathology. Even when personality disorder remits, maladaptive self-perception and social function may persist. Such maladaptive function in self-other relatedness appears to be specific to personality pathology and independent of internalizing and externalizing pathology. Internalizing and externalizing pathology are antecedents of personality pathology and are subsumed in personality pathology as adolescents with high levels of personality pathology mature, such that high levels of comorbidity and shared risk factors are maintained throughout development.

Adolescence as sensitive period for the development of personality pathology

Building on these conclusions and Caspi *et al.*'s [68] developmental psychopathology model for the emergence of the psychopathology (severity or 'p') factor, we present a model that incorporates personality pathology, represented in the DSM-5 Section III Criterion A (impaired function in self-other relatedness) as a qualitatively different level of psychopathology beyond internalizing and externalizing pathology, and on the severity pathway toward psychotic disorders (Figure 1).

In this model, correlated but distinct internalizing and externalizing problems begin to emerge in pre-adolescence in the form of anxiety and depressive symptoms predominantly in girls, and ADHD, conduct problems predominantly in boys. If left untreated, and in the context of predisposing biological vulnerabilities and interacting stressful life events, internalizing and externalizing problems form a platform for the development of personality pathology during adolescence, characterized by a qualitatively different level of psychopathology in

Figure 1



A developmental psychopathology model for the development of personality pathology during adolescence. *Notes*. Criterion A refers to the DSM-5 Section III alternative model criterion shared by all personality disorders and defined as maladaptive self-other relatedness. 'P' refers to the psychopathology (or severity) factor as suggested by Caspi *et al.* [68].

the form of maladaptive self-other relatedness. We say qualitatively different because this new level of psychopathology cannot be adequately captured by dispositional traits associated with internalizing and externalizing problems — that is, traits are insufficient to describe personality disorder because they constitute merely one component of the personality system [69]. Personality (and therefore personality disorder) is integrated and organized in nature [70] and the task of organizing traits into a coherent whole becomes a major focus of adolescence. Until adolescence, children are not cognitively, socially or emotionally prepared for the task of integrating and organizing knowledge about themselves into a coherent whole. Just as the Big Five can readily be observed in preadolescent children, so can maladaptive dispositional traits (e.g. neuroticism, antagonism, disagreeableness and psychoticism) which can be readily evaluated by assessing internalizing and externalizing psychopathology [42]. However, it is not until adolescence that an agentic, self-determining actor begins to emerge [71••]. While this process of identity formation may proceed smoothly for most adolescents, for some this process will be characterized by incoherence, inconsistency, confusion, and distress, ultimately resulting in a personality structure resembling DSM-5 Section III Criterion A personality function. The progression from internalizing/externalizing to the next level of maladaptive self-other function brings with it increases in psychiatric severity ('p'), more persistence and stability and lower population-based prevalence rates of disorder. The model proposed here is reminiscent of Kernberg's [72] diagnostic classification system for the personality disorders, which hypothesizes that all personality disorders, including BPD, exist at what is termed the borderline level of personality organization (BPO). Two additional levels of personality organization is described by Kernberg, namely neurotic (internalizing and externalizing psychopathology) and psychotic personality organization. While Kernberg's model represents an attempt to subtype personality pathology, it shares features with the proposed developmental model in that borderline pathology is identified as having heuristic value in representing what is common to all personality pathology (Criterion A) and which lies on the severity pathway between internalizing/externalizing and psychotic psychopathology.

To conclude, the noun adolescence derives from the Latin word *adolescere*, which means 'to ripen' or 'to grow up'. Central to this maturation, is the developmental task of integrating disparate representations into a coherent whole in service of identity formation. It is in the context of the normative emergence of the agentic self that disturbed self-other function can be observed and personality pathology can be diagnosed.

Conflict of interest statement

Nothing declared.

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