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Clarifying the Associations between Big Five Personality Domains and Higher-Order
Psychopathology Dimensions in Youth

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Abstract

In a large sample of youth (N = 942, 51% female), we found support for a 3 correlated factors model of psychopathology that comprised Distress, Fears, and Externalizing factors. Distress was positively associated with Neuroticism, Fears was not associated with Big Five dimensions, and Externalizing was negatively associated with Agreeableness and Conscientiousness. Relations between lower-order psychopathology dimensions and the Big Five were generally accounted for by the higher-order psychopathology factors. There was little evidence of hypothesized two- or three-way interactions among the Big Five dimensions in statistically predicting higher-order psychopathology factors. Together, our findings support the developmental structural continuity of personality and psychopathology, and suggest that at least in youth, personality relates to psychopathology in a largely non-specific manner.

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1. Introduction

Personality traits emerge early in life (Lamb et al., 2002) and are relatively stable across lengthy stretches of time (De Fruyt et al., 2006). For example, the Big Five (sometimes termed the “Little Five” in children; John et al., 1994) emerge in children as young as 4 years old, and considerable evidence suggests that the five-factor model is a useful framework for organizing personality traits in youth (Shiner & DeYoung, 2013). Moreover, the Big Five appear to reflect liability for various forms of psychopathology (e.g., Kotov et al., 2010; Krueger & Tackett, 2003). Nonetheless, the lion’s share of research has focused on adults despite clear evidence that early personality traits are concurrent predictors of psychopathology in youth, and prospective predictors of psychopathology in late adolescence and adulthood (Tackett, 2006).

Much recent research has organized psychopathology hierarchically, focusing on two broad higher-order spectra of psychopathology, Externalizing and Internalizing (Kotov et al., 2017). Externalizing in youth comprises psychiatric features characterized by poor emotional and behavioral control, including features linked to conduct disorder, oppositional defiant disorder, and attention-deficit hyperactivity disorder. Internalizing in youth comprises features characterized by elevated negative emotionality, including those linked to anxiety, depression, and social phobia. Some data suggest that Internalizing can be parsed into two correlated factors, Fears and Distress (Krueger,

1999). Fears comprises phobias, panic, and separation anxiety, whereas Distress comprises depression and generalized anxiety.¹

In their seminal study, John and colleagues (1994) established that boys with externalizing propensities were characterized by lower levels of Agreeableness and Conscientiousness and higher levels of Extraversion, whereas boys with internalizing propensities were characterized by higher levels of Neuroticism and lower levels of Conscientiousness. These findings presaged a now larger literature demonstrating that lower levels of Agreeableness and Conscientiousness, on the one hand, and higher levels of Neuroticism and lower levels of Conscientiousness, on the other, emerge as broad risk factors among youth for externalizing and internalizing psychopathology, respectively (Tackett, 2006). Notably, these patterns are largely consistent with those in the adult literature (Kotov et al., 2010).

1.1 Present Study

The majority of the literature examining personality-psychopathology relations has focused on isolated personality traits' relations with one or two psychiatric disorders, rather than on comprehensive models of personality and higher-order psychopathology spectra. As such, the extent to which personality traits are associated with multiple levels of the psychopathology hierarchy warrants closer examination. To address this gap in the literature, we examined the interface between personality and

¹ Other research has identified other higher-order spectra, such as thought problems, detachment, and somatoform proneness, that are placed within the same level of the psychopathology hierarchy as externalizing and internalizing (see Kotov et al., 2017). In part owing to their relatively low levels in the population, especially among youth, the psychiatric conditions comprising these other spectra are not assessed routinely in large-scale, epidemiological investigations of the structure of psychopathology.

structural models of psychopathology in a large, representative community sample of children and adolescents aged 4 to 17.

Aim 1. We tested two competing structural models of psychopathology in youth and examined each model's relations with Big Five domains. These models included two- (Externalizing, Internalizing) and three-factor (Externalizing, Fears, Distress) structures. Using a larger set of psychopathology data from this sample (N = 2409, data for the Big Five dimensions were not available for the complete sample), Watts, Poore, and Waldman (in press)² found that the 3 correlated factors model best explained the structure of psychopathology, although this model yielded highly correlated Fears and Distress factors.

We extend this work by examining the Big Five's relations with the higher-order psychopathology dimensions (i.e., Distress, Fears, and Externalizing), as well as their residual relations with lower-order psychopathology dimensions (e.g., generalized anxiety net of Distress). These latter relations will clarify the extent to which broad Externalizing and Internalizing tendencies account for the relations between a single personality domain and a single psychopathology symptom dimension. We hypothesized that Externalizing would be negatively associated with Agreeableness and Conscientiousness, and positively associated with Neuroticism (Tackett, 2006). We also hypothesized that Internalizing would be positively associated with Neuroticism, and slightly negatively associated with Extraversion and Conscientiousness (Kotov et al.,

² This manuscript aimed to delineate various criteria by which researchers might adjudicate among structural models of psychopathology. The Big Five data presented here were not used in this manuscript.

2010). We advanced predictions for a broad Internalizing factor but did not generate specific predictions for Fears and Distress factors.

Aim 2. On the basis of prior research, we examined the extent to which the Big Five domains interact statistically to predict higher-order psychopathology dimensions. Across 5 samples of youth, Vasey and colleagues (2013) identified significant three-way potentiating interactions among emotional stability (reversed Neuroticism), positive emotionality (a trait that is closely related to Extraversion), and effortful control (a component of Conscientiousness) in the statistical prediction of depression (see also Allen et al., 2018). Vasey and colleagues (2014) further demonstrated that these statistical interactions adhere to a “best two-out-of-three” principle, whereby high levels of at least two of the three traits (Emotional Stability, Extraversion, and Conscientiousness) decreased risk for depression. They also found some support for a “worst two-out-of-three” principle, whereby low levels of at least two of these traits increased risk for depression (Vasey et al., 2014; see also Allen et al., 2018). In contrast with the existing research, which tends to target main effects between Big Five domains and psychopathology, these findings suggest that certain traits *in concert* confer even greater risk for psychopathology than each of the traits in isolation. For example, individuals with high levels of Neuroticism may be partially immunized against depression risk if their Neuroticism is buffered by either high levels of trait positive emotionality or intact impulse control, the latter of which may allow distressed individuals to engage in better regulation of their negative moods.

Given that this is the first study to examine statistical interactions among the Big Five dimensions in predicting higher-order psychopathology factors, we first examined

two-way interactions based on the existing literature before testing three-way interactions (Allen et al., 2018; Vasey et al., 2013). For Internalizing, and Distress more specifically, we tested all possible two-way combinations of Neuroticism, Extraversion, and Conscientiousness. To our knowledge, no study has tested two-way interactions between Big Five dimensions in predicting Externalizing. Hence, we examined all possible two-way combinations of Agreeableness, Conscientiousness, and Neuroticism, in addition to a three-way interaction, based on the main effects observed in the literature (Tackett, 2006).

2. Method

2.1 Participants and Procedure

Parents of 942 individuals (51% females) aged 4 to 17 ($M_{age} = 8.6$ years, $SD = 2.9$) provided ratings on a battery of personality traits and psychopathology for each child in the household. All families of twins born in Georgia between 1980 and 1991 were contacted to participate in the study, and the sample size was determined by the number of families who completed the questionnaires used in the present study. Mothers (53%), fathers (1%), or both mothers and fathers (46%) completed the questionnaires. Seventy-one percent of the sample were twin pairs (45% MZ, 55% DZ) and 29% were siblings of twins. The racial and ethnic background of participants was 82% Caucasian, 11% African American, 1% Hispanic, and 6% other/mixed ethnicity.³

2.2 Measures

³ This study, which was based on data collected from 1993 to 1997, was not pre-registered. Participants did not consent to individual-level data being shared with the public. All output files, which include correlation and covariance matrices, as well as descriptive statistics for all relevant indicators, are available at: <https://osf.io/ckfje/>.

Parents completed the *Emory Combined Rating Scale*, a questionnaire assessing DSM-IV (American Psychiatric Association, 1994) signs and symptoms of common youth psychiatric disorders (Waldman et al., 1998). Each item of this questionnaire corresponds to a DSM-IV sign or symptom. Items were rated on a 0 to 4 scale (“not at all” to “very much” representative of the child). The measure assessed the following disorders and disorder features: anxiety and anxiety-related disorders (i.e., agoraphobia, generalized anxiety disorder, obsessions, compulsions, panic disorder, social phobia, specific phobia, and separation anxiety disorder), mood disorders (i.e., major depressive and dysthymic disorders), attention-deficit hyperactivity disorder (i.e., inattention, hyperactivity, and impulsivity symptom dimensions), disruptive behavior disorders (i.e., conduct disorder, oppositional defiant disorder), and vocal and motor tics (Cronbach’s α s ranged from .54 [Agoraphobia] to .98 [Panic disorder]). Features of bipolar and thought disorders (e.g., schizophrenia) were not assessed owing to their relatively low levels in the general population, particularly among youth.

Parents also completed the *Big Five Personality Questionnaire* (Lanthier, 1994), which comprises 60 personality adjectives designed to reflect the five-factor model domains. It was formulated by combining adjectives and descriptors from well-established five-factor model inventories (Goldberg, 1990; McCrae and Costa, 1987; Norman, 1967). Approximately 90% of the items are captured in widely-used and well-validated personality inventories, including the Big Five Inventory (John, Donahue, & Kentle, 1991), NEO Personality Inventory-Revised (Costa & McCrae, 1992), and adjective-based measures (e.g., Saucier, 1994, 1997) that include descriptors identified by Goldberg (1990) and Norman (1967). It was designed for use with children or adults

with a late elementary school reading level. Each of the 5 dimensions is represented by 12 items (in this sample, Cronbach's alphas ranged from .73 [Openness] to .90 [Conscientiousness]), with a near equal number of items for each pole of the dimension to minimize acquiescence bias (see Table S9 for all adjectives).

2.3 Data Analysis

We conducted all analyses using Mplus version 7.2 (Muthén & Muthén, 2014) using the "cluster" option to account for nonindependence due to the nesting of twins and siblings within families. Factor analyses were fit to the raw data using full-information maximum likelihood to account for missing data (Ns for psychopathology symptom dimensions ranged from 707 to 942 depending on the analysis) and the MLR estimator to accommodate continuous symptom dimensions' nonnormality. We focused on significant relations at $p < .001$ given the large number of tests conducted.

3. Results

3.1 Structural Models of Psychopathology in Youth

Both the 3 correlated factors model, which contained correlated Externalizing, Fears, and Distress factors ($\chi^2 = 507$, $df = 87$, $p < .001$; RMSEA = .04; CFI = .86; TLI = .83; AIC = 86027; BIC = 86307; SRMR = .06), and 2 correlated factors model, which collapsed Fears and Distress factors into a broad Internalizing factor ($\chi^2 = 564$, $df = 89$, $p < .001$; RMSEA = .05; CFI = .84; TLI = .82; AIC = 86200; BIC = 86468; SRMR = .06) fit the data reasonably well. These models explained a statistically equivalent amount of the variance in psychopathology indicators (see Figure S1). We could not, however, equate Fears and Distress' relations with the Big Five dimensions without a significant

decrement in model fit (Satorra-Bentler $\Delta\chi^2 = 12.39$, $df = 5$, $p = .03$), indicating that a model that parsed Fears and Distress was preferable to one that did not.

Externalizing was moderately positively associated with Internalizing in the 2 correlated factors model ($r = .52$), and Fears ($r = .44$) and Distress ($r = .59$) in the 3 correlated factors model. Fears and Distress were highly correlated ($r = .80$) in the 3 correlated factors model (see Table 1 for all loadings and factor intercorrelations). Internalizing from the 2 correlated factors model was generally well-represented by its indicators, with loadings ranging from .36 (tics) to .73 (generalized anxiety). Fears and distress from the 3 correlated factors model were similarly represented by their indicators, with loadings ranging from .35 (tics) to .65 (agoraphobia) and .68 (major depression) to .79 (generalized anxiety), respectively. Externalizing from either model was also generally well-represented by its indicators, with loadings ranging from .33 (conduct disorder) to .82 (hyperactivity).

3.2 Relations between Big Five Dimensions and Psychopathology

We examined psychopathology factors' relations with personality while estimating the psychopathology structural model, obviating the need to save factor scores. In addition to examining zero-order associations, we conducted regressions in which all Big Five domains were entered as simultaneous predictors of the higher-order psychopathology factors to account for covariation among Big Five domains (see Table 2).⁴

⁴ In exploratory analyses, we examined age and gender as moderators of the relations between the Big Five and higher-order psychopathology factors. We conducted these analyses in light of the considerable age range in the present sample, and to elucidate potential age- and gender-related differences in the associations between personality and psychopathology. These findings are summarized in the Supplemental Materials.

Internalizing was significantly positively associated with Neuroticism ($r = .17$) but no other Big Five domain (r s ranged from $-.10$ to $.01$). This finding mirrored the relation for Distress ($r = .16$) but not Fears ($r = .02$). Fears was essentially unrelated to the Big Five dimensions (r s ranged from $-.02$ to $.04$). Externalizing was significantly negatively associated with Agreeableness ($r = -.27$) and Conscientiousness ($r = -.25$) but no other Big Five domain (r s ranged from $-.05$ to $.08$).

In secondary analyses, we conducted these same regressions with all higher-order psychopathology factors in the model simultaneously to yield relations with the Big Five that were unique to each higher-order psychopathology factor. When doing so, higher-order psychopathology factors yielded more discriminating, and often stronger, relations with Big Five dimensions, reflecting cooperative suppressor effects. Specifically, the relations of Externalizing and Internalizing with Neuroticism became more pronounced after accounting for their shared variance (r s were $.17$ and $.23$), as did the relations for Fears and Distress after covarying Externalizing (r s were $.18$, and $.29$). Similarly, the relations of Externalizing and Internalizing with Agreeableness became more negative after accounting for their shared variance (r s were $-.33$ and $-.17$), as did the relations for Fears and Distress after covarying Externalizing (r s were $-.11$ and $-.25$). Lastly, Distress became slightly negatively associated with Conscientiousness ($r = -.12$) after covarying Externalizing and Fears.

Net of the higher-order factors, lower-order psychopathology dimensions were generally unrelated to the Big Five domains, with the following exceptions. Generalized anxiety, depression, social anxiety, and oppositional defiant disorder symptom dimensions were significantly positively associated with Neuroticism (r s were $.09$, $.11$,

.13, and .14, respectively); social anxiety and oppositional defiant disorder were significantly negatively associated with Extraversion (r s were $-.16$ and $-.09$); hyperactivity and impulsivity were significantly positively associated with Extraversion (r s were $.12$ and $.07$); social anxiety and inattention were significantly negatively associated with Openness (r s were $-.12$ and $-.10$); generalized anxiety and oppositional defiant disorder were significantly negatively associated with Agreeableness (r s were $-.27$ and $-.20$); and inattention was significantly negatively associated with Conscientiousness ($r = -.25$). On balance, these findings suggest that individual symptom dimensions' relations with personality were largely accounted for by broad Externalizing and Internalizing tendencies.

3.3 Statistical Interactions among Big Five Dimensions

None of the 9 hypothesized two-way interactions between Big Five domains was significant (see Table S8), nor were any of the hypothesized three-way interactions for Internalizing (or Distress more specifically). In contrast, 1 of the 4 hypothesized three-way interactions was significant. Conscientiousness, Agreeableness, and Neuroticism interacted significantly ($\Delta R^2 = .01$) such that Externalizing in youth was slightly more pronounced at lower levels of Conscientiousness and Agreeableness and higher levels of Neuroticism.

4.1 Discussion

A large body of research suggests that liability to various forms of psychopathology can be described in terms of individual differences in personality (e.g., Kotov et al., 2010, 2017; Krueger & Tackett, 2003). Much of this literature is based on adult samples, and focuses on single personality traits and their relations with one or

two psychiatric disorders in isolation. Against the backdrop of considerable evidence that consensus models of personality can be applied to youth (Tackett, 2006), and the increasing adoption of hierarchical structural models of psychopathology (Kotov et al., 2017), we examined the relations between the Big Five dimensions and higher-order structures of psychopathology in a large, representative sample of youth.

Our findings supported a 3 correlated factors model of psychopathology in youth, with Externalizing, Fears, and Distress factors. These findings accord with the adult literature (Krueger, 1999), which increasingly parses Fears and Distress (Kotov et al., 2017). These findings, therefore, hint towards structural continuity in psychopathology across development. This conclusion is consistent with the shift in DSM-5 to highlight continuity of psychopathology across developmental periods, rather than to carve out separate psychopathological domains for youth and adults.

Moreover, the relations between personality dimensions and higher-order psychopathology factors were largely consistent with the youth literature (Tackett, 2006). Externalizing in youth was characterized by lower social warmth and effortful control (i.e., Agreeableness and Conscientiousness, respectively), as well as higher negative emotionality (i.e., Neuroticism). We suspect that this latter relation was driven, at least in part, by the irritability facet of Neuroticism, but it may extend to other subdimensions of negative emotionality, including depression and impulsiveness facets (e.g., Walton et al., 2018). More fine-grained (facet- or aspect-level) measures of neuroticism will be needed in further research to examine these possibilities. Distress was characterized by higher negative emotionality (i.e., neuroticism) and no other elevations in Big Five domains, whereas Fears was generally unrelated to the Big Five.

Although many of our results were conceptual replications of findings in the adult literature, our analyses did yield several relatively novel findings. First, the finding that Fears, Distress, and Externalizing were all uniquely positively associated with Neuroticism and negatively associated with Agreeableness highlights the prominent roles of negative emotionality and antagonism in youth psychopathology, as well as their intertwined nature (Tackett et al., 2012). Second, our findings potentially clarify the nature of Internalizing's relations with Neuroticism and Agreeableness, which appear to be driven by distress as opposed to fears-related pathology. At the same time, others have demonstrated that Neuroticism is nearly equally associated with Fears and Distress among adults when personality and psychopathology are self-reported (Walton et al., 2018). Our findings may broadly corroborate literature demonstrating psychometric and potential etiological differences between anxiety and fear (Sylvers, Lilienfeld, & LaPrarie, 2009), although Neuroticism's differential relations with Fears and Distress may have arisen from (1) the relatively low levels of fear-related pathology in our sample, thereby restricting the range of these lower-order symptom dimensions; (2) the relative lack of observability of fears-related pathology (Tackett et al., 2016); or (3) the content coverage of our Neuroticism scale, given that child neuroticism measures tend to differ in the degree to which they cover the broad array of negative emotionality features (e.g., De Pauw, Mervielde, & Van Leeuwen, 2009). We encourage further efforts to examine the potential for differential relations between Neuroticism and forms of Internalizing psychopathology.

Third, we did not find that Internalizing was significantly negatively associated with Extraversion, although this finding has not been replicated consistently in the adult

literature (Kotov et al., 2010). There were a number of significant residual correlations between Extraversion and indicators of activity- (or approach-) related psychopathology, however, as evidenced by positive relations for hyperactivity and impulsivity and negative relations for oppositional defiant disorder and social anxiety disorder. Although these residual associations were small in magnitude, they suggest the presence of an unmodeled activity-related psychopathology factor that may relate preferentially with Extraversion. This possibility is consistent with the prominent role of activity in traditional temperament (and child personality) models (Buss & Plomin, 1984; Soto & John, 2014), in which activity is sometimes a separate factor (John et al., 1994; Soto & John, 2014), and the prominent role of activity in classic research on semantic differential rating scales (Osgood, Suci, & Tannenbaum, 1957). It might instead or also suggest that parents rely in part on activity level to gauge Extraversion in their children (Tackett et al., 2016).

Additionally, these residual relations between lower-order psychopathology symptom dimensions and Extraversion are consistent with the literature, in which narrower aspects of Internalizing, specifically depression and social anxiety, bear relatively robust negative relations with Extraversion (Kotov et al., 2010). In this way, although our findings in general support a shift away from a focus on single disorder-single trait relations, an emphasis consistent with the recently launched Hierarchical Taxonomy of Psychopathology initiative (HiTOP; Kotov et al., 2017), they also suggest added value in examining lower-order psychopathology symptom dimensions, or at least multiple levels of the psychopathology hierarchy.

Lastly, we found little evidence of hypothesized two- and three-way interactions among Big Five dimensions in the statistical prediction of higher-order psychopathology factors (cf., Allen et al., 2017; Vasey et al., 2013). One explanation for our null findings is that previous interactional findings were Type I errors, although this possibility seems unlikely given the extent to which they have been replicated. Alternatively, the interactions among Big Five dimensions may exist at a more granular level than our Big Five measure permits examining, given that it assesses personality at the broad domain level only. Indeed, Allen and colleagues (2017) argued that the three-way interactions detected by Vasey and colleagues (2013) occur at narrower aspects of the Big Five domains, namely the withdrawal aspect of Neuroticism, the enthusiasm aspect of Extraversion, and the industriousness aspect of Conscientiousness. Should within-domain components of Big Five relate differentially with psychopathology (e.g., Watson et al., 2019), it is likely that our domain-level analysis of the Big Five precludes detection of these effects. More generally, given that there is considerable heterogeneity within the Big Five domains, the pattern of associations between personality and psychopathology may become more nuanced, or even more pronounced, at lower levels of the personality and psychopathology hierarchies.

3.5 Limitations

Our findings were marked by several limitations. First, we relied on parent ratings of personality and psychopathology out of practical necessity (e.g., Martel, Markon, Smith, 2018; Shiner & DeYoung, 2013). Due to social desirability, acquiescence, or other response biases, this approach might have contributed to a spuriously high degree of positive manifold among the personality dimensions and psychopathology

symptom dimensions, as well as between these two broad domains. At the same time, psychopathology symptom dimensions were not invariably positively intercorrelated, suggesting that parents were able to differentiate among psychopathology domains. Second, we relied on ratings of symptom criteria, which are effectively unipolar. It is therefore likely that we did not capture the full range of symptom continua, such that we were restricted to modeling the average to above average levels of these latent dimensions. This limitation may have contributed to attenuated interaction effects between personality and psychopathology (Vasey et al., 2014). Third, we did not assess ostensibly more severe forms of psychopathology, including bipolar disorder, thought disorder, and autism spectrum disorder given their low levels in the population. Fourth, we relied on a predominantly Caucasian sample of youth in the southeastern United States, in which there were relatively low rates of endorsement for psychopathology. As such, these findings might not generalize to more clinically severe or culturally-diverse samples.

3.6 Conclusion

The observed relations between personality dimensions and hierarchical structures of psychopathology were largely consistent with the adult literature, suggesting developmental structural continuity of personality and psychopathology. As we incorporated personality into multiple levels of the psychopathology hierarchy, we have begun to elucidate which personality traits are associated with broad dimensions of psychopathology (e.g., Externalizing, Internalizing), as well as with narrower dimensions (e.g., inattention, social anxiety). In broad brush, our findings indicate that personality in youth relates to psychopathology in a largely non-specific way, either

conferring risk for, or sharing common mechanisms with, broad dimensions of psychopathology as opposed to specific psychiatric disorders (Krueger & Tackett, 2003).

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Table 1. Factor loadings and intercorrelations two- and three-correlated factor psychopathology models.

| Psychopathology | 3 Correlated Factors | | | | | | 2 Correlated Factors | | | |
|---------------------------------|----------------------|-----|------------|-----|------------------------------------|-----|----------------------|-----|-----------------------------------------|-----|
| | Fears | | Distress | | Externalizing | | Internalizing | | Externalizing | |
| | λ | SE | λ | SE | λ | SE | λ | SE | λ | SE |
| Agoraphobia | .65 | .07 | | | | | .63 | .07 | | |
| Compulsions | .43 | .12 | | | | | .42 | .11 | | |
| Generalized anxiety | | | .79 | .04 | | | .73 | .05 | | |
| Major depression | | | .68 | .05 | | | .61 | .05 | | |
| Obsessions | .44 | .10 | | | | | .43 | .10 | | |
| Panic | .51 | .13 | | | | | .47 | .12 | | |
| Separation anxiety | .62 | .05 | | | | | .59 | .05 | | |
| Social anxiety | .46 | .06 | | | | | .46 | .05 | | |
| Specific phobia | .53 | .05 | | | | | .49 | .06 | | |
| Tics | .35 | .12 | | | | | .36 | .11 | | |
| Conduct disorder | | | | | .34 | .06 | | | .33 | .06 |
| Hyperactivity | | | | | .82 | .03 | | | .82 | .03 |
| Impulsivity | | | | | .78 | .03 | | | .79 | .03 |
| Inattention | | | | | .70 | .04 | | | .69 | .04 |
| Oppositional defiant disorder | | | | | .71 | .04 | | | .70 | .04 |
| Factor Intercorrelations | | | | | Fears-Distress: .80 | | | | | |
| | | | | | Fears-Externalizing: .44 | | | | | |
| | | | | | Distress-Externalizing: .59 | | | | | |
| | | | | | | | | | Internalizing-Externalizing: .52 | |

Note. Bolded is $p < .001$ and italicized is $p < .01$.

Table 2. Relations between the three correlated psychopathology factors and Big Five dimensions.

| | Neuroticism | | Extraversion | | Openness | | Agreeableness | | Conscientiousness | |
|--------------------------------------------------------------------------------------------------|-------------|------------|--------------|------------|----------|---------|---------------|-------------|-------------------|-------------|
| | <i>r</i> | β | <i>r</i> | β | <i>r</i> | β | <i>r</i> | β | <i>r</i> | β |
| Higher-order psychopathology dimensions in isolation | | | | | | | | | | |
| Internalizing | .17 | .19 | -.10 | -.03 | -.01 | .08 | -.04 | -.03 | .01 | .05 |
| Fears | .02 | .04 | -.02 | .00 | -.01 | -.01 | .04 | .05 | .01 | .00 |
| Distress | .16 | .24 | -.08 | -.06 | .01 | .20 | -.10 | -.15 | .00 | .07 |
| Externalizing | .08 | .06 | .07 | .12 | -.05 | -.03 | -.27 | -.17 | -.25 | -.16 |
| Higher-order psychopathology dimensions entered simultaneously | | | | | | | | | | |
| Internalizing | .23 | .24 | -.09 | .01 | -.03 | .08 | -.17 | -.10 | -.10 | -.01 |
| Fears | .18 | .20 | -.07 | .02 | -.03 | .05 | -.11 | -.06 | -.08 | -.02 |
| Distress | .29 | .29 | -.11 | .01 | -.02 | .12 | -.25 | -.17 | -.12 | .00 |
| Externalizing | .17 | .14 | .03 | .12 | -.06 | .00 | -.33 | -.20 | -.28 | -.16 |
| Lower-order psychopathology dimensions net of the higher-order psychopathology dimensions | | | | | | | | | | |
| Agoraphobia | .00 | .01 | -.01 | -.01 | .02 | .03 | .03 | .00 | .06 | .05 |
| Compulsions | -.08 | -.06 | .01 | .01 | -.02 | -.08 | .10 | .08 | .04 | .02 |
| Conduct disorder | .03 | .06 | -.10 | .00 | .02 | .03 | .00 | -.02 | .05 | .07 |
| Generalized anxiety | .09 | .10 | .00 | .03 | .01 | .06 | -.10 | -.08 | -.04 | .00 |
| Hyperactivity | -.06 | .00 | .12 | .12 | .03 | -.02 | .01 | .02 | -.01 | -.03 |
| Impulsivity | -.06 | -.02 | .07 | .06 | .03 | .00 | -.01 | .01 | -.05 | -.06 |
| Inattention | .06 | -.02 | -.09 | -.07 | -.10 | -.07 | -.03 | .03 | -.10 | -.10 |
| Major depression | .11 | .08 | -.08 | -.06 | -.01 | .05 | -.07 | -.07 | -.01 | .04 |

| | | | | | | | | | | |
|-------------------------------|------------|------|-------------|------|-------------|------|-------------|-------------|------|------|
| Obsessions | -.07 | -.08 | .02 | -.03 | .04 | .02 | .03 | .00 | .03 | .02 |
| Oppositional defiant disorder | .14 | .07 | <i>-.09</i> | -.06 | -.03 | .04 | -.20 | -.20 | -.08 | .03 |
| Panic disorder | -.09 | -.07 | .05 | .00 | .06 | .01 | .05 | .00 | .05 | .04 |
| Separation anxiety | .09 | .14 | -.01 | .05 | -.01 | .02 | .00 | .06 | -.03 | -.05 |
| Social anxiety disorder | .13 | .05 | -.16 | -.11 | -.12 | -.06 | .02 | .02 | .04 | .04 |
| Specific phobia | .05 | .05 | -.02 | .02 | -.02 | -.01 | -.02 | .02 | -.06 | -.06 |
| Tics | .04 | .06 | .02 | .06 | -.01 | .00 | -.05 | .01 | -.08 | -.08 |

Note. Bolded is $p < .001$ and italicized is $p < .01$.

r = zero-order relation between Big Five domain and psychopathology; β = partial relation between Big Five domain and psychopathology when all Big Five domains are entered simultaneously into the model.

Highlights

- We examined the relations between personality and psychopathology in youth.
- Distress was positively associated with Neuroticism.
- Externalizing was negatively associated with Agreeableness and Conscientiousness.
- There was developmental structural continuity of personality and psychopathology.