Journal of Personality Disorders, 24(2), 217–243, 2010

DIAGNOSIS AND SUBTYPES OF ADOLESCENT ANTISOCIAL PERSONALITY DISORDER

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The present study examined the application of the Antisocial Personality Disorder (APD) diagnosis to adolescents and investigated the possibility of subtypes of APD adolescents. As part of a broader study of adolescent personality in clinically-referred patients, experienced clinicians provided personality data on a randomly selected patient in their care using the SWAP-II-A personality pathology instrument. Three hundred thirteen adolescents met adult DSM-IV diagnostic criteria for APD. To characterize adolescents with the disorder, we aggregated the data to identify the items most descriptive and distinctive of APD adolescents relative to other teenagers in the sample ($N = 950$). Q-factor analysis identified five personality subtypes: psychopathic-like, socially withdrawn, impulsive-histrionic, emotionally dysregulated, and attentionally dysregulated. The five subtypes differed in predictable ways on a set of external criteria related to global adaptive functioning, childhood family environment, and family history of psychiatric illness. Both the APD diagnosis and the empirically derived APD subtypes provided incremental validity over and above the DSM-IV disruptive behavior disorders in predicting global adaptive functioning, number of arrests, early-onset severe externalizing pathology, and quality of peer relationships. Although preliminary, these results provide support for the use of both APD and personality-based subtyping systems in adolescents.

The Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV) uses two diagnoses to categorize antisocial behavior in youth: Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD). In contrast, adults who persist in antisocial behavior are diagnosed with Antisocial Personality Disorder (APD). Despite significant symptom overlap between the childhood and adult diagnoses for antisocial behavior, separate age-based diagnostic groups remain. Through subsequent editions of the DSM, CD, and ODD diagnoses, which were originally applied to children, were extended upward to adolescents. Preliminary and controversial research has been conducted on extending the APD construct downward to

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adolescents (Taylor, Elkins, Legrand, Peuschold, & Iacono, 2007; Taylor & Iacono, 2007) to supplement the current diagnostic system.

Recent research suggests that personality disorder (PD) diagnoses apply in adolescents just as they do in adults and predict a range of outcomes decades later (Cohen, Crawford, Johnson, & Kasen, 2005; Westen & Chang, 2000). To what extent the APD diagnosis in adolescents might account for, or add to, the utility or predictive validity of CDD and OD is unknown. As applying the APD diagnosis to adolescents has not been thoroughly researched, the construct needs further examination. It is not currently clear whether adolescent APD is a homogenous construct. The goal of this paper is to examine whether the APD diagnosis and empirically-derived subtypes of patients meeting criteria for the disorder predict criterion variables such as global adaptive functioning, number of arrests, early-onset severe externalizing pathology, and quality of peer relationships above and beyond CD and ODD diagnoses. That is, the goal is to test the value added of the APD diagnosis and empirically derived subtypes above and beyond the diagnoses currently used to describe disruptive behavior problems in adolescents.

CURRENT DIAGNOSTIC SYSTEM

There is controversy regarding how best to diagnose disruptive behavior. Some question the distinction between ODD and CD (Frick et al., 1991; Lahey & Loeber, 1994). Others believe that ODD is a mild form of CD and should be treated as a subtype of CD (Achenbach, 1993; Loeber, Green, Keenan, & Lahey, 1995; Russo, Loeber, Lahey, & Keenan, 1994), whereas others have produced empirical work suggesting a distinction between the two (Cohen & Flory, 1998; Fergusson, Horwood, & Lynskey, 1994). Some findings suggest that supplementing the current diagnostic system may lead to a better clinical understanding of disruptive behavior. Salekin, Neumann, Leistico, DiCicco, and Duros (2004) found that a measure of youth psychopathy, the PCL-YV, was able to predict overall, violent, and nonviolent offenses after controlling for ADHD, ODD, and CD symptoms. These results suggest that CD and ODD diagnoses may be capturing only part of the variance in the childhood disruptive behavior disorders.

CONSTRUCT VALIDITY OF ADOLESCENT APD

Two recent studies examined the APD construct in adolescents. Taylor & Iacono (2007) measured personality traits of CD, APD, and control adolescents to investigate potential personality differences across antisocial behavior diagnoses. Results indicated that the CD group had significantly less negative emotionality and more constraint than APD adolescents. Of note, CD adolescents only differed from the control group on aggression, a subscale of negative emotionality. The results suggested that there may be significant differences in personality traits between various adolescent

antisocial behavior diagnoses, with more personality pathology associated with APD. Further, Taylor et al. (2007) assessed the construct validity of adolescent APD by comparing comorbid disorders, peers, cognitive functioning, academic functioning, and paternal history of APD for 3 groups: adolescents with CD, adolescents with APD, and young adults with APD. Results indicated that APD adolescents differed from CD adolescents with regard to substance abuse, depression, peer deviance, academic performance, and cognitive functioning. The APD adolescents and APD adults did not differ with regard to paternal ASPD, peer deviance, academic achievement, or cognitive functioning, but APD adolescents did report more alcohol abuse, cannabis use, and nicotine dependence. The authors concluded that APD may be a valid construct for identifying adolescents with severe antisocial behavior.

Some are reluctant to diagnose PDs in adolescents as some personality traits may be less stable in adolescents than in adults (Roberts & Mroczek, 2008; Roberts, Walton, & Viechtbauer, 2006). However, research suggests that personality pathology measured in adolescents predicts a wide range of behaviors, traits, and symptoms both concurrently and prospectively (Block, 1993; Johnson et al., 2000; Roberts & Delvecchio, 2000). Further, longitudinal and developmental research investigating issues such as stability of symptoms, stability of an APD disorder, homotypic continuity, and heterotypic continuity would significantly augment the construct validity of adolescent APD.

SUBTYPING OF CD AND ODD IN ADOLESCENTS

As antisocial youths are a heterogeneous population, various research groups used different methods to designate clinically meaningful subtypes. Quay's subtypes (1964, 1965), undersocialized aggressive and socialized aggressive, differed with respect to social skills development and with whom antisocial behavior was exhibited (e.g., undersocialized aggressive youths were thought to lack social skills and behave antisocially on their own while socialized aggressive youths possessed adequate social skills and behaved antiosically with peers). Another early attempt at subtyping using longitudinal data identified two subtypes, violent and nonviolent delinquents, which differed on IQ, aggressiveness at school, early separation from parents, and harsh parenting (Farrington, 1978).

Research examining callous and unemotional traits in children found that those with both CD and a high rate of callous unemotional traits were found to have more interactions with the police, a stronger history of parental APD, more diverse conduct problems, and a greater number of conduct problems (Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick & Ellis, 1999). Lynam postulated that symptoms of hyperactivity, impulsivity, and attention problems (HIA) and conduct problems (CP) could be used to identify four groups: non-HIA-CP, HIA only, CP only, and HIA-CP (1996, 1998). Consistent with prior findings, HIA-CP boys had higher maternal reports

of psychopathic traits, more self-reported delinquency, more impulsivity, and diminished planning associated with frontal lobe functioning (Lynam, 1998).

Moffitt's developmental model distinguishes two subtypes of youth antisocial behavior: adolescence-limited and life-course-persistent (Moffitt, 1993; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). The adolescence-limited group was characterized by an oppositional personality and to experiment with drugs and alcohol due to an exaggeration of the maturity gap between childhood and adulthood experienced during adolescence. The life-course-persistent group was characterized by physical aggression, early antisocial behavior, a chaotic family environment, neuropsychological deficits, and a cold-callous interpersonal style due to an interaction between difficult temperament and a criminogenic environment.

THE PRESENT STUDY

Separate age-based diagnostic categories are presented in the DSM-IV for categorizing patterns of antisocial behavior. The overlap in symptoms between the childhood antisocial behavior disorders (CD and ODD) and the adult antisocial behavior disorder (APD) warrants an empirical analysis which examines adolescent APD and whether personality-based subtypes are helpful in understanding the heterogeneity of adolescent disruptive behavior.

In the present study we used a personality Q-sort procedure to examine the characteristics of adolescents who met adult criteria for APD, and identified personality-based subtypes of these adolescents. We used contrast analyses to examine whether the subtypes differed in regards to a variety of criterion variables. We then tested the incremental validity of both adolescent APD and the empirically derived subtypes over and above categorical and dimensional measures of ODD and CD in predicting adaptive functioning, arrest history, quality of peer relationships, and indicators of early-onset severe externalizing pathology.

METHOD

SAMPLE AND PROCEDURES

The study method has been described in detail elsewhere (Westen & Shedler, 2007). We contacted a random national sample of psychiatrists and psychologists with at least five years experience post-residency (M.D.s) or post-licensure (Ph.D.s) who indicated clinical interests in children and adolescents from the membership rosters of the American Psychiatric and American Psychological Associations. No specialization beyond children or adolescents was required (e.g., experience with PDs was not taken into account). Over one-third of clinicians, with diverse theoretical orientations and patient populations, contacted agreed to participate in the study.

Clinicians were asked to describe "an adolescent patient you are currently treating or evaluating who has enduring patterns of thoughts, feelings, motivation, or behavior—that is, personality problems—that cause distress or dysfunction." To avoid selection biases, clinicians were instructed to select the last patient they had seen the previous week who met study criteria. Formal checks suggested that clinicians followed this procedure and did not arbitrarily select a patient (Westen & Shedler, 2007). To ensure a broad spectrum, from mild to severe, of personality pathology we emphasized that the adolescent must have problematic personality traits, but not necessarily a PD diagnosis. We obtained a stratified random sample, stratifying on age (14–18) and sex.

MEASURES

Disruptive Behavior Disorders Checklist. We provided clinicians with a checklist of all DSM-IV diagnostic criteria for ADHD, ODD, and CD. ADHD symptoms were included along with ODD and CD symptoms due to the frequent comorbidity of ADHD with ODD and CD diagnoses (Volk, Neuman, & Todd, 2005). Dimensional constructs of the disorders reflected the number of symptoms positively-endorsed by the clinician. Of the 950 patients from the larger sample, 138 met criteria for ADHD, 272 met criteria for ODD, and 82 met criteria for CD. As in other studies when clinicians are asked to respond to specific criteria rather than to make free-form diagnoses, the external correlates of obtained diagnoses strongly resemble those obtained using structured interviews (Westen & Weinberger, 2004).

Axis II Checklist. We presented clinicians with a randomly ordered checklist of the criteria for all Axis II disorders to produce dimensional DSM-IV PD diagnoses. This method produced diagnoses similar to those based on structured interviews such as the SCID-II (Blais & Norman, 1997; Morey, 1988; Westen, Shedler, Durrett, Glass, & Martens, 2003). Both adult and adolescent research confirms that using this method to collect Axis II ratings yields similar external correlates and produces similar patterns of comorbidity to methods which utilize structured interviews (Durrett & Westen, 2005; Westen et al., 2003).

PD Construct Ratings. Using the single sentence summary that introduces each PD in the DSM-IV, we asked clinicians to rate how similar the participant was to the description using a 5-point scale. We used this method to gauge whether the participant resembled each PD construct without using the specific diagnostic criteria, which is particularly important given the "downward extension" of adult APD criteria to adolescents, when there may be a similar construct but the criteria may differ in ways reflecting developmental differences. Anchors indicated that ratings of 4 or 5 constituted the presence of a PD.

Shedler-Westen Assessment Procedure for Adolescents, Version II (SWAP-II-A). The SWAP-II-A is a 200-item personality and personality pathology Q-sort (Westen, Dutra, & Shedler, 2005). A Q-sort is a set of state-

ments that provides a standard vocabulary for clinicians to use to describe their clinical observations. To describe the patient using the SWAP-II-A, the clinician sorts (rank-orders) the 200 statements into eight categories ranging from 0 (irrelevant and not descriptive of the individual) to 8 (applicable and descriptive of the individual), with intermediate categories representing marginal applicability. Analyses of both the adult and adolescent versions of the SWAP found the instrument to be reliable and valid, predicting a range of measures of adaptive functioning (e.g., history of psychiatric hospitalizations, school performance, violence), general psychopathology (e.g., the CBCL), etiological variables (e.g., childhood history of physical and sexual abuse, family history of internalizing and externalizing disorders), and personality as assessed by independent interviewers blind to clinician data (Westen & Muderrisoglu, 2003, 2006; Westen & Shedler, 1999a, 1999b; Westen et al., 2003).

Clinical Data Form for Adolescents (CDF-A). The CDF-A assesses a range of variables, through clinician-report ratings, including: adaptive functioning (e.g., school performance, peer relations, arrests, suicide attempts, and psychiatric hospitalizations), etiology (e.g., family stability, history of foster care, and physical abuse), and family history of psychiatric illness (Westen & Shedler, 1999a,b; Westen et al., 2003). Clinician ratings of adaptive functioning variables demonstrate high interrater reliability and validity (e.g., correlations with the same data obtained by independent interview $r > .60$) (Hilsenroth et al., 2000; Westen, Muderrisoglu, Fowler, Shedler, & Koren, 1997). Research with both adolescents and adults demonstrated that clinicians' judgments on etiologic variables predicted theoretically relevant criterion variables, as well as reasonable (and conservative) decision rules (Dutra, Campbell, & Westen, 2004; Nakash-Eisikovits, Dutra, & Westen, 2002).

STATISTICAL ANALYSIS

We first identified our study group of interest: adolescents who met criteria for APD. *T*-test and chi-square analyses were performed to ensure that the APD group was clinically distinct from a randomly sampled non-APD group from the larger study sample regarding abuse history, externalizing symptoms, adaptive functioning, psychiatric illness in family members, and violence. To provide a clinical description of APD adolescents we used four methods for defining the 18 most descriptive features of APD adolescents (i.e., items that, on average, clinicians assigned a ranking of 6 or 7 out of 7). The 1st and 3rd columns present composite descriptions of patients diagnosed with the disorder using the 5-point construct ratings, and the 2nd and 4th columns describe composites of patients meeting DSM-IV criteria. We report two composite descriptions based on each diagnostic method: a raw composite, describing the 18 items with the highest average rank for patients meeting criteria; and a standardized composite, describ-

ing the 18 z-scored items with the highest average rank. The raw composites describe the items that are empirically most characteristic of the average patient with the disorder, whereas the standardized composites describe the items that are most specific to patients with APD (i.e., that distinguish them from other adolescents in the sample).

To identify potential subgroups of adolescents based on personality profiles, we performed a Q-factor analysis (Block, 1978) to data from the SWAP-200-A. Research projects studying both normal personality (Block, 1978; Caspi, 1998; Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996) and disordered personality (Westen & Harnden-Fischer, 2001; Westen & Shedler, 1999b; Westen et al., 2003) used this technique effectively. While conventional factor analysis identifies items that share a common underlying dimension (a common factor) across patients, Q-analysis as applied to personality data identifies patients who share a core personality style or organization (i.e., patients who have similar profiles across items). This statistical technique is distinctive within the group of cluster-analytic procedures as Q-analytic findings have consistently replicated across samples and shown predictable external correlates (Bailey, Moran, Pederson, & Bento, 2007; Blagov, Bradley, & Westen, 2007; Thompson-Brenner & Westen, 2005). Applying Q-analysis to SWAP-II-A data allowed us to see whether meaningful personality configurations exist among APD adolescents.

We followed standard factor-analytic procedures, first entering the data into a principal components analysis, specifying eigenvalues =1 (Kaiser's criteria), and used both the scree plot and percent of variance accounted for to determine the number of Q-factors to rotate. We applied multiple estimation procedures and several different rotation techniques to increase the likelihood of identifying robust and coherent factors. We then constructed a priori hypotheses (i.e., formulated prior to statistically examining differences across subtypes) to examine how the five subtypes and control group differed on adaptive functioning, etiologic variables, family history of psychiatric illness, and comorbidity of APD with both Axis I and Axis II disorders.

A final set of analyses served to assess the incremental validity of applying the APD diagnosis to adolescents and whether using the derived APD subtypes would account for an increased variance, over and above that of CD, ADHD, and ODD diagnoses in clinically and theoretically meaningful criterion variables. We used hierarchical multiple regression to examine the potential utility of both the APD diagnosis and APD subtypes in adolescents to predict adaptive functioning, number of arrests, quality of peer relationships, and early-onset severe externalizing pathology while holding constant dimensional measures of ADHD, ODD, and CD. We also conducted an analysis with APD diagnosis in Step 1 and CD and ODD diagnoses in Step 2 to test whether the two existing diagnosis show incremental validity above and beyond the adult diagnosis.

RESULTS

Table 1 presents demographic information for the 313 adolescents who met DSM-IV diagnostic criteria for APD and a randomly selected control group of 313 clinically referred adolescents from the same broader sample. Of the APD adolescents, 58.1 % were male, 72.2% were Caucasian, 36.4% were middle class, and the mean age was 15.5 years.

DIFFERENCES BETWEEN APD AND NON-APD ADOLESCENTS

Table 2 reports differences (*t*-tests and chi-square analyses) between the APD group and the control group for variables on which they should differ theoretically. We predicted that the APD adolescents would have poorer current functioning, worse externalizing pathology, poorer early life environments, worse early life experiences, and more familial pathology of substance abuse and criminal behavior. The APD and control groups do not significantly differ with regard to age, but do differ in SES, such that APD adolescents come from significantly lower SES groups. As predicted, the APD group shows strong patterns of externalizing behavior pathology; poor adaptive functioning; difficult early childhood environment; poor social skills; and family history of substance abuse, criminal behavior, and a relative lack of anxiety disorders.

EMPIRICALLY-DERIVED DESCRIPTION OF APD ADOLESCENTS

To examine the clinical and personality characteristics of the adolescents who met adult diagnostic criteria for APD, we aggregated the data from the SWAP-II-A for those adolescents who met DSM-IV criteria to create

TABLE 1. Demographic Characteristics of APD Adolescents

	APD Adolescents *N* = 313	Control Adolescents *N* = 313	Total *N* = 616
Gender			
Male	58.1	46.3	52.2
Female	41.5	53.7	47.6
Race			
Caucasian	72.2	85.9	79.1
African American	11.8	4.2	8.0
Hispanic	8.3	4.5	6.4
Asian	2.2	1.9	2.1
Other	5.1	3.5	4.3
SES			
Poor	10.5	4.2	7.3
Working Class	29.1	11.2	20.1
Middle Class	36.4	41.5	39.0
Upper Middle Class	19.8	35.1	27.5
Upper Class	3.8	7.3	5.6
Age (Mean, S.D.)	15.48 (1.58)	15.51 (1.58)	15.50 (1.58)

Note. Data are presented as percentage of participants unless otherwise specified.

TABLE 2. Differences Between Adolescent Patients With and Without APD

	APD *N* = 313 *M*(SD)	Control *N* = 313 *M*(SD)	*t*(*df*)	*p*
Age	15.48(1.58)	15.51(1.58)	.22(622)	.82
SES[a]	2.77(1.00)	3.31 (.92)	6.90(621)	<.001
Quality of Peer Relationships[a]	2.36 (.80)	2.68 (.86)	4.84(623)	<.001
School Functioning[a]	2.21 (.81)	3.25 (.99)	14.33(624)	<.001
Global Adaptive Functioning[b]	−.41 (.53)	.20 (.66)	12.60(624)	<.001
Global Externalizing Pathology[b]	.61 (.65)	−.31 (.45)	−20.67(624)	<.001
Global School Functioning[b]	−.57 (.68)	.34 (.90)	14.24(624)	<.001
Early Life Separations	.17 (.37)	.06 (.24)	−3.76(514)	<.001
Number of Foster Placements	3.76(3.77)	2.88(2.03)	−.92 (69)	.36
Family Warmth[a]	2.85(1.02)	3.21 (.99)	4.52(623)	<.001
Physical Fights[a]	2.77(1.41)	1.50 (.91)	−13.39(620)	<.001
Stealing[a]	2.40(1.31)	1.26 (.73)	−13.46(620)	<.001
Violent Acts	4.18(2.28)	1.12(1.44)	−20.04(624)	<.001
Arrests[a]	1.75 (.97)	1.12 (.45)	−10.36(622)	<.001
Childhood Family Environment[b]	−.29 (.67)	.15 (.69)	7.99(624)	<.001
Attachment Disruptions[b]	.25 (.86)	−.11 (.61)	−6.12(624)	<.001
Adverse Childhood Events	4.83(2.30)	3.82(1.95)	−5.93(624)	<.001
Early-Onset Severe Externalizing Pathology	.42 (.84)	−.22 (.37)	−12.24(624)	<.001
			χ^2(*df*)	
Foster Care[c]	18	6	23.01(1)	<.001
Family Investigated by State DSS[c]	27	14	15.88(1)	<.001
Physical Abuse[c]	18	13	2.75(1)	.10
Sexual Abuse[c]	19	12	6.06(1)	.01
Fire Setting[c]	12	4	15.25(1)	<.001
Animal Torture[c]	6	1	11.04(1)	.001
Substance Abuse[c]	64	26	91.33(1)	<.001
Truancy, Suspensions, School Discipline[c]	89	35	190.79(1)	<.001
Chronic Lying[c]	69	20	151.56(1)	<.001
Vandalism[c]	17	2	37.74(1)	<.001
Gang Activity[c]	5	.01	11.26(1)	.001
Solo Criminal Activity[c]	31	3	86.80(1)	<.001
Familial Anxiety Disorders[c]	20	30	7.68(1)	.006
Familial Alcohol Abuse[c]	35	23	11.26(1)	.001
Familial Illicit Drug Use[c]	29	17	13.15(1)	<.001
Familial Criminal Behavior[c]	19	6	25.28(1)	<.001

[a]Participants rated on a 5-point scale; [b]Standardized (*Z*) scores; [c]Percent meeting criteria

composite descriptions reflecting the shared, core, and distinctive features of the disorder. Table 3 presents the results. The first 12 items in the table were identified among the top 30 items in all four composites, meeting essentially four consistency tests on their validity as diagnostic indicators. These items strongly resemble the DSM-IV diagnostic criteria for CD, ODD, and APD. Five items were among the top 30 for the two raw composites, but not for the two standardized composites (i.e., they are highly characteristic of adolescents meeting adult APD criteria, but not distinctive of them relative to other clinically referred teenagers). While three of these items are more general in nature (i.e., giving up easily, feeling bored, and feeling misunderstood), the other two items pertain to emotional dysregulation and cognitive decompensation under duress. Three items were among the top 30 for the two standardized composites, but not for the two raw composites (i.e., distinctive of them but not most characteristic of their

TABLE 3. SWAP Characteristics

	Raw Ranks		Standardized Ranks	
SWAP II ITEM	**Prototype Rating**	**Axis II Checklist**	**Prototype Rating**	**Axis II Checklist**
Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	1	3	13	19
Tends to be impulsive.	2	1	21	5
Is rebellious or defiant toward authority figures; tends to be oppositional, contrary, quick to disagree, etc.	3	2	22	11
Tends to be unreliable and irresponsible (e.g., may fail to meet school or work obligations).	4	4	18	13
Takes advantage of others; is out for number one.	5	27	3	8
Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	7	9	12	6
Tends to be deceitful; tends to lie or mislead.	8	12	7	2
Has little empathy; seems unable to understand or respond to others' needs and feelings unless they coincide with his/her own.	10	24	8	20
Experiences little or no remorse for harm or injury caused to others.	11	28	4	4
Tends to surround him/herself with peers who are delinquent or deeply alienated.	13	26	6	9
Tends to be manipulative.	14	8	28	14
Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	21	15	24	7
Tends to show reckless disregard for the rights, property, or safety of others.	6	**33**	2	3
Tends to engage in criminal or delinquent behavior (moderate placement of this item implies occasional or petty crimes such as shoplifting or vandalism).	12	**45**	1	1
Derives satisfaction or self-esteem from being, or being seen as, "bad" or "tough."	15	**38**	5	12
Is prone to violence (e.g., may break things, provoke fights, or become physically assaultive).	18	**32**	10	10
Tends to abuse alcohol or drugs (beyond what is normative given his/her age, background, etc.).	19	**41**	9	15
Tends to be angry or hostile (whether consciously or unconsciously).	9	5	**34**	21
Has little psychological insight into own motives, behavior, etc.	16	11	**37**	27
Is prone to intense anger, out of proportion to the situation at hand.	20	7	**45**	18

TABLE 3. Continued

SWAP II ITEM	Raw Ranks		Standardized Ranks	
	Prototype Rating	**Axis II Checklist**	**Prototype Rating**	**Axis II Checklist**
Appears to gain pleasure or satisfaction by being sadistic or aggressive toward others (whether consciously or unconsciously).	**32**	**90**	11	22
Tends to run away from home.	**49**	**82**	14	17
Relationships tend to be unstable, chaotic, and rapidly changing.	**37**	**40**	19	16
Tends to seek power or influence with peers (whether in beneficial or destructive ways).	28	**73**	15	**49**
Has an exaggerated sense of self-importance (e.g., feels special, superior, grand; believes s/he is the object of envy; tends to boast or brag).	25	**51**	16	**33**
Tends to feel misunderstood, mistreated, or victimized.	17	10	**64**	**73**
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	27	6	**94**	**46**
Tends to give up quickly when frustrated or challenged.	29	13	**81**	**45**
When upset has trouble perceiving the same qualities in the same person at the same time (e.g., may see others in black or white terms, shift suddenly from seeing someone as caring to seeing him/her as malevolent and intentionally hurtful, etc.)	30	17	**77**	**63**
Tends to feel bored.	24	18	**54**	**62**
Attempts to avoid feeling helpless or depressed by becoming angry instead.	**35**	14	**91**	**48**
Tends to feel unhappy, depressed, or despondent.	**45**	16	**181**	**145**
Seems to treat others primarily as an audience to witness own importance, brilliance, beauty, etc.	**61**	**105**	17	**40**

Note. Bolded items are those which are not in the top 30 items for the method reported by a particular column

everyday functioning). These included the tendency to run away from home, which is also a criterion for CD; the tendency to have unstable relationships, reflecting interpersonal difficulties that are not among either the CD or ODD diagnostic criteria; and taking pleasure in being sadistic or aggressive behavior (a characteristic of early-onset, pernicious forms of delinquency).

IDENTIFYING PERSONALITY SUBTYPES AMONG APD ADOLESCENTS

Although the analyses above provide a compelling empirical portrait of the phenomenology of antisocial adolescents, it is possible that very different

kinds of teenagers could receive the same diagnosis. To test that possibility, we used a person-centered statistical procedure, Q-factor analysis to uncover latent personality configurations (subtypes). To make our analyses more conservative, we identified a subsample of APD adolescents based on two criteria: (1) whether they met DSM-IV diagnostic criteria for APD, and (2) whether clinicians rated them as a 4 or 5 on the APD construct rating scale ($n = 151$).

To determine the number of factors to extract and rotate, we first entered the SWAP-II-A data from the APD adolescents into a principal component analysis, specifying eigenvalues ≥ 1. Analysis of the eigenvalues, scree plot, percent of variance accounted for, and parallel analysis (Horn, 1965) suggested a five-factor solution. To increase the likelihood of identifying robust and coherent Q-factors, we conducted Promax (oblique) rotations specifying 5 factors, using multiple estimation procedures (primarily Principal Axis Factoring and Unweighted Least Squares, whose assumptions best fit the characteristics of our data, such as skewness and kurtosis). Five Q-factors appeared the most robust and clinically coherent across extractions and estimation procedures, explaining 48.8% of the variance. We report here the 5-Q-factor solution. Table 4 lists the 18 SWAP-II-A items most descriptive of the 5 subtypes, which we labeled psychopathic-like, socially withdrawn, impulsive-histrionic, emotionally dysregulated, and attentionally dysregulated.

The first Q-Factor, Psychopathic-like, captures Lynam's construct of the fledgling psychopath (Lynam 1996, 1997) and is reminiscent of Cleckley's conceptualization of psychopathy (Cleckley, 1941). Adolescents who strongly match the psychopathic prototype are emotionally cold, oppositional, lacking in empathy or remorse, dishonest, callous, angry, violent, narcissistic, and manipulative. They are unresponsive to consequences and tend to engage in criminal behavior. Further, these adolescents seem to derive satisfaction and gratification from their antisocial behavior.

The second personality subtype, Socially Withdrawn, represents adolescents who are peer neglected and lack close friendships and social support. Those in the socially withdrawn group not only exhibit social skills deficits, but are also depressed, anhedonic, bored, angry, rebellious, and impulsive. They have an external locus of control, low self-esteem, and an immature and ill-defined self-concept.

We labeled the third Q-Factor Impulsive-Histrionic due to the mix of rash, reckless, theatrical, and exaggerated emotions common to this subgroup. Impulsive-Impulsive-Histrionic adolescents behave impulsively in a variety of domains: interpersonal relationships, sexual interactions, and substance use. They seek to be the center of attention and will often use their sexuality to further this endeavor; as a result, they may become rapidly involved in abusive, dysfunctional, or inappropriate sexual relationships. These adolescents do not have stable self-concepts but seem to derive pleasure from delinquent activities.

Emotionally Dysregulated adolescents, the fourth personality subtype,

TABLE 4. Personality Subtypes in APD Adolescents

	Mean (SD units)
Q-Factor 1: Psychopathic-like	
Takes advantage of others; has little investment in moral values (e.g., puts own needs first, uses or exploits people with little regard for their feelings or welfare, etc.).	2.77
Has little empathy; seems unable or unwilling to understand or respond to others' needs or feelings.	2.71
Experiences little or no remorse for harm or injury caused to others.	2.70
Tends to show reckless disregard for the rights, property, or safety of others.	2.53
Is prone to violence (e.g., may break things, provoke fights, or become physically assaultive).	2.49
Is rebellious or defiant toward authority figures; tends to be oppositional, contrary, quick to disagree, etc.	2.46
Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	2.46
Appears to gain pleasure or satisfaction by being sadistic or aggressive (whether consciously or unconsciously) or bullying others.	2.38
Tends to be angry or hostile (whether consciously or unconsciously).	2.31
Tends to be critical of others.	2.17
Tends to hold grudges; may dwell on insults or slights for long periods.	2.16
Tends to be manipulative.	1.99
Has an exaggerated sense of self-importance (e.g., feels special, superior, grand; believes s/he is the object of envy; tends to boast or brag).	1.99
Is prone to intense anger, out of proportion to the situation at hand (e.g., has rage episodes).	1.98
Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	1.97
Tends to be deceitful; tends to lie or mislead.	1.93
Tends to engage in criminal or delinquent behavior (moderate placement of this item implies occasional or petty crimes such as shoplifting or vandalism).	1.87
Derives satisfaction or self-esteem from being, or being seen as, "bad" or "tough."	1.85
Q-Factor 2: Socially Withdrawn	
Tends to feel like an outcast or outsider.	3.11
Tends to feel unhappy, depressed, or despondent.	3.03
Tends to feel s/he is inadequate, inferior, or a failure.	2.64
Lacks close friendships and relationships.	2.31
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	2.14
Tends to feel misunderstood, mistreated, or victimized.	2.03
Tends to give up quickly when frustrated or challenged.	1.90
Tends to be angry or hostile (whether consciously or unconsciously).	1.88
Tends to feel life has no meaning.	1.85
Lacks a stable sense of who s/he is (e.g., attitudes, values, goals, and feelings about self seem unstable or ever-changing).	1.82
Tends to surround him/herself with peers who are delinquent or deeply alienated.	1.81
Has little psychological insight into own motives, behavior, etc.	1.80
Appears to find little or no pleasure, satisfaction, or enjoyment in life's activities.	1.72
Is rebellious or defiant toward authority figures; tends to be oppositional, contrary, quick to disagree, etc.	1.65
Tends to feel bored.	1.63
Tends to be unreliable and irresponsible (e.g., may fail to meet school or work obligations).	1.61
Tends to abuse alcohol or drugs (beyond what is normative given his/her age, background, etc.).	1.55
Tends to feel helpless, powerless, or at the mercy of forces outside his/her control (beyond what is warranted by the situation).	1.51

(*continued*)

TABLE 4. Continued

	Mean (SD units)
Q-Factor 3: Impulsive-Histrionic	
Tends to abuse alcohol or drugs (beyond what is normative given his/her age, background, etc.).	4.11
Is sexually promiscuous for a person of his/her age, background, etc.	3.56
Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	3.13
Tends to be sexually seductive or provocative (e.g., may be inappropriately flirtatious, preoccupied with sexual conquest, prone to use his/her physical attractiveness to an excessive degree to gain notice).	2.77
Tends to run away from home.	2.74
Tends to choose sexual or romantic partners who seem inappropriate in terms of age, status (e.g., social, economic, intellectual), etc.	2.73
Tends to surround him/herself with peers who are delinquent or deeply alienated.	2.47
Tends to engage in criminal or delinquent behavior (moderate placement of this item implies occasional or petty crimes such as shoplifting or vandalism).	2.38
Relationships tend to be unstable, chaotic, and rapidly changing.	2.32
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	1.90
Tends to become attached quickly or intensely; develops feelings, expectations, etc. that are not warranted by the history or context of the relationship.	1.90
Tends to get drawn into relationships outside the family in which s/he is emotionally or physically abused, or needlessly puts self in dangerous situations (e.g., walking alone or meeting strangers in unsafe places).	1.86
Seeks to be the center of attention.	1.78
Is rebellious or defiant toward authority figures; tends to be oppositional, contrary, quick to disagree, etc.	1.77
Lacks a stable sense of who s/he is (e.g., attitudes, values, goals, and feelings about self seem unstable or ever-changing).	1.64
Derives satisfaction or self-esteem from being, or being seen as, "bad" or "tough."	1.59
Tends to be manipulative.	1.52
Tends to get involved in romantic or sexual "triangles" (e.g., becomes interested in people who are already attached, sought by someone else, etc.).	1.49
Q-Factor 4: Emotionally Dysregulated	
Emotions tend to spiral out of control, leading to extremes of anxiety, sadness, rage, etc.	3.69
Emotions tend to change rapidly and unpredictably.	3.27
Has difficulty maintaining attention and focus on tasks; is easily distracted by sights, sounds, unrelated thoughts, or other competing stimuli.	3.26
Is prone to intense anger, out of proportion to the situation at hand (e.g., has rage episodes).	3.18
When upset, has trouble perceiving both positive and negative qualities in the same person at the same time (e.g., may see others in black or white terms, shift suddenly from seeing someone as caring to seeing him/her as malevolent and intentionally hurtful, etc.).	3.03
Expresses emotion in exaggerated and theatrical ways.	2.82
When distressed, tends to revert to earlier, less mature ways of coping (e.g., clinging, whining, having tantrums).	2.75
Has trouble sitting still; is restless, fidgety, or hyperactive.	2.69
Tends to become irrational when strong emotions are stirred up; may show a significant decline from customary level of functioning.	2.49
Tends to have extreme reactions to perceived slights or criticism (e.g., may react with rage, humiliation, etc.).	2.19
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	2.04
Seeks to be the center of attention.	2.02
Tends to be manipulative.	1.87
Has little psychological insight into own motives, behavior, etc.	1.76

TABLE 4. Continued

	Mean (SD units)
Attempts to avoid feeling helpless or depressed by becoming angry instead.	1.60
When distressed, perception of reality can become grossly impaired (e.g., thinking may seem delusional).	1.54
Tends to give up quickly when frustrated or challenged.	1.54
Has difficulty making sense of other people's behavior; tends to misunderstand, misinterpret, or be confused by others' actions and reactions.	1.54
Q-Factor 5: Attentionally Dysregulated	
Has difficulty maintaining attention and focus on tasks; is easily distracted by sights, sounds, unrelated thoughts, or other competing stimuli.	3.00
Tends to be unreliable and irresponsible (e.g., may fail to meet school or work obligations).	2.81
Has trouble sitting still; is restless, fidgety, or hyperactive.	2.77
Tends to be deceitful; tends to lie or mislead.	2.49
Tends to be liked by other people.	2.37
Tends to blame own failures or shortcomings on other people or circumstances; attributes his/her difficulties to external factors rather than accepting responsibility for own conduct or choices.	2.34
Tends to seek thrills, novelty, excitement, etc.; appears to require a high level of stimulation.	2.33
Has a good sense of humor.	2.29
Tends to be energetic and outgoing.	2.12
Appears comfortable and at ease in social situations.	2.08
Is able to assert him/herself effectively and appropriately when necessary.	2.03
Is conflicted or inhibited about achievement or success (e.g., achievements may be below potential, may sabotage self just before attaining important goals, etc.).	2.02
Has little psychological insight into own motives, behavior, etc.	1.95
Appears impervious to consequences; seems unable or unwilling to modify behavior in response to threats or negative consequences.	1.88
Tends to act impulsively (e.g., acts without forethought or concern for consequences).	1.85
Is invested in seeing and portraying self as emotionally strong, untroubled, and emotionally in control, despite clear evidence of underlying insecurity, anxiety, or distress.	1.83
Repeatedly convinces others of his/her commitment to change but then reverts to previous maladaptive behavior; tends to convince others that "this time is really different."	1.80
Tends to express anger in passive and indirect ways (e.g., may make mistakes, procrastinate, forget, become sulky, etc.).	1.73

struggle to control their emotions. Accompanying the emotional escalations that typify this subgroup are problems with splitting people into good and bad without being able to integrate emotionally discordant features of their personality or behavior, cognitive disorganization under stress, impulsivity, inappropriate anger, and attention-seeking. These adolescents have immature coping styles and have deficits in understanding the behavior of others.

The fifth Q-Factor, Attentionally Dysregulated, represents the highest functioning subtype, characterized by a combination of both positive psychological features and clinical problems associated with ADHD. The attentionally dysregulated constellation includes difficulties with maintain-

ing attention, distractability, hyperactivity, restlessness, and impulsivity. In addition, these adolescents frequently lie, perform below their expected level in school, blame others, and ignore consequences. Alongside these deficits, however, attentionally dysregulated adolescents have a number of strengths: they are well-liked, have a good sense of humor, and interact appropriately with others.

We ran secondary analyses on subgroups of APD adolescent defined demographically, notably males, females, Caucasians, and minorities, to see whether we would find different subtypes within different demographic groups or whether these results adequately generalize across demographics. Q-factor solutions were highly similar in all four analyses, suggesting the preferability of reporting the analysis using the entire sample.

VALIDATION OF THE PERSONALITY SUBTYPES

We constructed a series of hypotheses predicting the relative means of the five personality subtypes and a control group of adolescents from the same sample not meeting APD criteria. The control group was generated via an SPSS macro to select a random group of adolescents who did not meet DSM-IV diagnostic criteria for APD (i.e., control adolescents could have zero, one, or two APD symptoms but never more than two). Hypotheses were tested using contrast analysis (Rosenthal, Rosnow, & Rubin, 2000) to test specific one-tailed hypotheses about the ordering of mean differences among subtypes on variables that should differ among groups if we had indeed identified valid distinctions, notably adaptive functioning, etiology (childhood history of adverse events), and family history of psychiatric illnesses. We used only variables not used to construct the subtypes to insure independence of the predictor and criterion variables. Although we do not assume the subtypes to necessarily be categorical in nature, we created categorical subtype groupings by assigning participants to the group for which they had the highest Q-correlation (similar to a factor loading) ≥.40 to systematically compare the subtypes. Only three of the adolescents initially identified as meeting APD criteria had loadings ≥.40 on two factors. These adolescents were not assigned to a subtyping group as it was not clear where to best assign them. Further, we calculated *r*-coefficients to provide an index of effect size. We derived our hypotheses from previous research and examination of the item content of the subtypes, prior to examining their external correlates. For example, because psychopathic children may have low levels of fearfulness and anxiety (Kotler & McMahon, 2005), we predicted that the psychopathic-like subtype would have the lowest frequency of familial anxiety disorders, and tested this using the contrast weights –6, 1, 1, 1, 0, and 3. Similarly, as emotional dysregulation is a prominent characteristic of Borderline PD we predicted that the emotionally dysregulated group would have the highest Borderline PD diagnoses, followed by the Impulsive-Histrionic group, due

to Cluster B comorbidity. To test this hypothesis we used the contrast weights 1 –2 2 3 –1 –3.[1]

Table 5 presents the results of the contrast analyses. The socially withdrawn group had the poorest scores for global adaptive functioning and school functioning. While adolescents in the psychopathic-like and impulsive-histrionic represented patients with the highest rates of externalizing behavior pathology, the psychopathic-like adolescents demonstrated the highest scores for early-onset severe externalizing pathology (defined as the early onset of fire setting, animal torture, violent behavior, arrests, and stealing). There were group differences in reported psychotherapy effectiveness. The emotionally-dysregulated group showed the poorest etiologic background, demonstrated by the worst scores for adverse childhood events, childhood family environment, attachment disruptions, and childhood trauma variables. The emotionally dysregulated adolescents also had the highest rates of familial suicide and familial alcoholism. Familial criminal behavior was equally frequent among the psychopathic-like, socially withdrawn, and impulsive-histrionic subtypes. The impulsive-histrionic adolescents had the lowest rates of familial anxiety disorders and the attentionally-dysregulated adolescents had the highest rates of familial illicit drug abuse. APD adolescents met criteria for comorbid disorders across Axis I and Axis II. CD and ODD diagnoses were most frequent, with the majority of APD adolescents meeting diagnostic criteria for the disruptive behavior disorders. Borderline PD was common among the socially withdrawn, impulsive-histrionic, and emotionally dysregulated groups while Histrionic PD was common only in the impulsive-histrionic and emotionally dysregulated groups. Generalized Anxiety Disorder was not common in any of the five APD subtypes.

INCREMENTAL VALIDITY OF ADOLESCENT APD AND PERSONALITY SUBTYPES

To examine the incremental validity of using APD as an additional diagnostic construct for adolescents with antisocial behavior, we ran several hierarchical multiple regression analyses predicting global adaptive functioning, number of arrests, quality of peer relationships, and early-onset severe externalizing pathology. Predictor variables other than number of arrests and quality of peer relationships are composite variables, created to maximize reliability of measurement. To be maximally conservative in these analyses, in Step 1 we entered the DSM-IV disruptive behavior disorders for children and adolescents, including not only ODD and CD but ADHD Inattentive and Hyperactive types, assessed dimensionally (indexed

1. Please contact the authors for more information on the generation of weights used in contrast analyses.

TABLE 5. Differences among Subtypes on Criterion Variables (Contrast Analyses)

	Psychopathic-like *N* = 71 *M*(SD)	Socially Withdrawn *N* = 27 *M*(SD)	Impulsive-Histrionic *N* = 20 *M*(SD)	Emotionally Dysregulated *N* = 22 *M*(SD)	Attentionally Dysregulated *N* = 11 M(SD)	Control *N* = 151 *M*(SD)	Hypotheses	*t*(*df*)	*p*	*r*
Adaptive Functioning										
Global Composite[a]	–.48 (.53)	–.82 (.41)	–.34 (.54)	–.60 (.43)	–.12 (.34)	.21 (.61)	–2 –1 –2 –1 2 4	7.37 (296)	<.001	.39
School Functioning[a]	–.60 (.64)	–.94 (.54)	–.59 (.81)	–.82 (.56)	–.49 (.39)	.40 (.88)	–2 –1 –1 –2 1 5	10.08 (296)	<.001	.51
Externalizing Behavior[a]	1.02 (.71)	.85 (.65)	1.04 (.70)	.59 (.57)	.55 (.45)	–.34 (.39)	4 1 3 2 1 –11	18.60 (296)	<.001	.73
Early-onset Severe Externalizing Pathology	.93 (.98)	.73 (.95)	.67 (.98)	.41 (.79)	.58 (.63)	–.22 (.37)	3 –1 2 1 –2 –3	5.19 (296)	<.001	.29
Psychotherapy Effectiveness[b]	3.19 (.82)	2.92 (.99)	3.00 (.67)	3.06 (.85)	2.60 (.89)	3.64 (.77)	–2 –1 –1 –1 1 4	2.55 (152)	.006	.20
Etiologic Variables										
Adverse Childhood Events	4.97(2.43)	4.67(1.86)	5.50(2.87)	6.05(2.68)	4.36(2.46)	4.01(2.00)	2 0 2 2 –2 –4	3.90 (296)	<.001	.22
Childhood Family Environment[a]	–.39 (.65)	–.36 (.89)	–.42 (.70)	–.49 (.73)	.04 (.57)	.15 (.67)	2 0 2 2 –2 –4	–4.86 (296)	<.001	.27
Attachment Disruptions[a]	.33 (.93)	.21 (.76)	.48 (.97)	.67 (.93)	.17 (.92)	–.08 (.62)	2 1 2 2 –2 –5	4.15 (296)	<.001	.23
Childhood Trauma[a]	.21 (.76)	.26 (.68)	.40 (.87)	.46 (.79)	.23 (.80)	–.04 (.67)	2 0 2 2 –2 –4	2.71 (296)	<.001	.16
Family History										
Anxiety Disorders[c]	13	19	5	23	9	30	–6 1 1 1 0 3	1.80 (296)	.04	.10
Suicide[c]	0	0	0	5	0	2	1 1 3 3 –2 –6	.122(296)	.45	.01
Criminal Behavior[c]	25	25	25	18	18	7	4 0 2 1 1 –8	4.39 (296)	<.001	.25
Alcoholism[c]	34	48	40	50	27	27	3 –1 2 2 –1 –5	1.67 (296)	.05	.10
Illicit Drug Abuse[c]	28	26	25	27	36	18	3 0 2 1 1 –7	1.96 (296)	.03	.11
Comorbidity										
Borderline PD[d]	24	63	50	45	0	14	1 –2 2 3 –1 –3	2.40 (296)	.02	.14
Histrionic PD[d]	13	7	45	41	0	4	1 –3 3 2 –1 –2	6.46 (296)	<.001	.35
ADHD-Inattentive[d]	35	33	37	38	45	12	1 –1 1 –1 2 –2	2.20 (281)	.03	.13
ADHD-Combined[d]	14	13	5	38	18	5	2 –1 2 2 –1 –4	2.45 (281)	.02	.14
CD[d]	77	91	89	55	64	3	2 1 2 2 –3 –5	8.54 (276)	<.001	.46
ODD[d]	97	96	95	95	73	43	2 1 2 2 –3 –5	4.98 (287)	<.001	.28
Generalized Anxiety Disorder[d]	1	7	10	9	0	19	–6 1 0 3 0 2	2.03 (296)	.04	.12
Substance Use Disorder[d]	37	63	75	23	27	5	2 1 2 2 –3 –5	5.02 (276)	<.001	.29

[a]Standardized (Z) scores; [b]Participants rated on 5-point scales; [c]Percent of participants with first degree family members with positive histories; [d]Percent of participants meeting diagnostic criteria

by number of criteria met) to maximize power. In Step 2 we added APD assessed dimensionally (number of criteria met). As can be seen from Table 6, for all regressions both the current disruptive behavior disorders (Step 1) and APD assessed dimensionally (Step 2) significantly predicted much of the variance in criterion variables, holding each other constant. When the APD symptoms were included in Step 2 of the regressions, one or more of the DSM-IV diagnoses failed to significantly predict the outcome variable.

Similar hierarchical multiple regression analyses were conducted to assess the clinical utility of the five APD personality subtypes. Using the same predictor variables from the prior regression analyses, we entered dimensional measures of the DSM-IV disruptive behavior disorders for children and adolescents in Step 1. In Step 2, we entered the dimensional scores (Q-correlations) for each APD adolescent for each of the five empirically-derived subtypes (i.e., the correlation, or extent of match, between the patient and each diagnostic prototype; on the logic of Q-correlations, see Block, 1978). Table 7 presents the results. For all regressions, the APD subtypes significantly predicted the criterion variable, holding disruptive behavior disorder diagnoses constant. For the analyses predicting global adaptive functioning and quality of peer relationships, the DSM-IV diagnoses failed to significantly predict in Step 1, but adding the APD subtypes in Step 2 was highly predictive.

TABLE 6. Incremental Validity of APD Over Current DSM-IV Diagnoses (Hierarchical Linear Regression)

Prediction of Global Functioning	Stand. β	*t*	*p*	*R*	R^2	*F* change	*df*	*p* change
Step 1				.53	.28	85.04	4	<.001
Step 2				.56	.31	32.78	1	<.001
ODD	.22	–5.99	<.001					
CD	.08	–1.80	.07					
Inattentive ADHD	.23	–5.76	<.001					
Hyperactive ADHD	.17	4.51	<.001					
APD	.28	–5.73	<.001					
Arrests								
Step 1				.61	.38	127.57	4	<.001
Step 2				.63	.39	27.12	1	<.001
ODD	–.06	–1.81	.07					
CD	.49	12.32	<.001					
Inattentive ADHD	–.05	–1.40	.16					
Hyperactive ADHD	–.06	–1.56	.12					
APD	.24	5.21	<.001					
Early-Onset Severe Externalizing Pathology								
Step 1				.68	.47	187.36	4	<.001
Step 2				.69	.48	11.76	1	.001
ODD	.02	.54	.59					
CD	.58	15.64	<.001					
Inattentive ADHD	–.01	–.15	.88					
Hyperactive ADHD	–.04	–1.15	.25					
APD	.15	3.43	.001					

TABLE 7. Incremental Validity of APD Personality Subtypes vis-à-vis DSM-IV Disruptive Behavior Disorder Diagnoses (Hierarchical Linear Regression)

Prediction of Global Functioning	*Stand.*β	*t*	*p*	*R*	R^2	*F* change	*df*	*p* change
Step 1				.25	.06	2.27	4	.07
Step 2				.48	.23	5.74	5	<.001
ODD	−.04	−.39	.70					
CD	−.22	−2.21	.03					
Inattentive ADHD	−.03	−.30	.76					
Hyperactive ADHD	.03	.26	.80					
Psychopathic-like	−.03	−.30	.76					
Socially Withdrawn	−.21	−2.21	.03					
Impulsive-Histrionic	.17	1.91	.06					
Emotionally Dysregulated	−.11	−.92	.36					
Attentionally Dysregulated	.23	2.35	.02					
Arrests								
Step 1				.53	.28	12.50	4	<.001
Step 2				.62	.39	4.33	5	.001
ODD	.07	.79	.43					
CD	.41	4.35	<.001					
Inattentive ADHD	−.15	−1.51	.14					
Hyperactive ADHD	.02	.22	.82					
Psychopathic-Like	−.10	−1.14	.26					
Socially Withdrawn	.05	.60	.55					
Impulsive-Histrionic	.16	2.08	.04					
Emotionally Dysregulated	−.23	−1.94	.05					
Attentionally Dysregulated	.22	2.50	.01					
Quality of Peer Relationships								
Step 1				.15	.02	.72	4	.577
Step 2				.49	.24	7.36	5	.001
ODD	−.00	−.03	.98					
CD	−.04	−.34	.73					
Inattentive ADHD	.02	.15	.88					
Hyperactive ADHD	.03	.25	.80					
Psychopathic-Like	−.07	−.75	.45					
Socially Withdrawn	−.01	−.07	.95					
Impulsive-Histrionic	.30	3.46	.001					
Emotionally Dysregulated	−.19	−1.60	.11					
Attentionally Dysregulated	.32	3.31	.001					

DISCUSSION

The results suggest that there are adolescents who meet DSM-IV diagnostic criteria for APD, who have symptoms and personality characteristics in many respects similar to adults diagnosed with APD, and who significantly differ from clinical controls with respect to a range of pertinent variables. Use of the APD diagnosis in adolescents was further supported as APD adolescents systematically differed from a group of clinical controls in predictable ways in family history of psychiatric illness, adaptive functioning, childhood environment, early life experiences, and clinical symptoms. These results offer some preliminary validation for diagnoses of adolescent APD, though further work is needed to differentiate APD from the other disruptive behavior disorders.

The composite profile of APD adolescents, obtained using four methods, identified 12 items across all four methods that reflect characteristics sim-

ilar to DSM-IV diagnostic criteria for CD, ODD, and APD. Two items found to be descriptive of APD (i.e., emotional dysregulation and cognitive splitting) tend to be more characteristic of individuals with Borderline PD and suggest the importance of subtyping. Overbeek, Vollebergh, Meeus, Engels, and Luijpers (2001) also found that children with severe conduct problems have difficulty regulating their emotions, and the research on hostile attributional biases in delinquent children (Dodge, 1980) also points to the kind of black-and-white thinking of youths with behavior problems. Three characteristics were found to be distinctive of APD adolescents (i.e., pathognomonic, but not descriptive of their everyday functioning): running away from home, engaging in unstable relationships, and taking pleasure in being sadistic. The utility of examining these four methods of diagnosing APD in adolescents and identifying the most descriptive and distinctive characteristics is that it allows us to develop APD criteria that are uniquely appropriate for adolescents, given that the criteria in the DSM-IV were derived from the study of antisocial adults.

Having found support for the hypothesis that the APD diagnosis can be applied to adolescents, we attempted to identify subtypes within this group. We expected that APD adolescents would be a heterogeneous group as previous research found subgroups of delinquent children and adolescents (Frick & Ellis, 1999; Lynam, 1998; Moffitt et al., 1996). Using Q-factor analytic procedures we found five subtypes of APD adolescents. The first subtype, psychopathic-like, replicated previous findings of adolescent fledgling psychopaths (Loney, Frick, Clements, Ellis, & Kerlin, 2003; Lynam, 1998). This group was exploitive of others, lacked empathy or remorse, violent, oppositional and rebellious, angry, aggressive, narcissistic, deceitful, and delinquent. Unlike the other subtypes, the psychopathic-like group did not show evidence of emotional dysregulation and intense emotional escalations; instead, these adolescents characteristically lacked emotion except for episodes of intense anger.

The second group, labeled Socially Withdrawn, presented as a group of adolescents who did not fit in with their peer group and experienced problems with impulsivity, depression, anhedonia, boredom, and oppositionality. These adolescents had many schizoid features as well as poor self-esteem, expressed in feeling like an outcast or outsider and feeling inadequate or inferior.

The Impulsive-Histrionic subtype was composed of a mix of problems centering around brash behavior and relational and sexual difficulties. These adolescents often act without forethought or planning and seem to experience a multitude of consequences resultantly. They often find themselves in difficult sexual situations as a result of their sexually provocative and promiscuous nature. They abuse substances, seek to be the center of attention, and continually re-form their self-concept.

The fourth subtype, Emotionally Dysregulated has features strongly reminiscent of borderline personality disorder and is a subtype found in other adolescent personality subtyping research (Westen et al., 2003).

These adolescents have difficulty controlling their emotions such that they experience extreme emotional reactions marked by irrational thinking, perceptible decline in functioning and coping, and splitting.

The last subgroup, Attentionally Dysregulated, was the highest functioning subtype, presenting with both personality and psychological strengths and weaknesses. These adolescents experience clinical symptoms typical of ADHD, and additionally tend to be deceitful, impervious to consequences, and externalizing of blame. Despite these problems, attentionally dysregulated adolescents tend to be socially-competent, well-liked, and interpersonally effective.

A series of planned, a priori contrast analyses examined the differences between the five personality subtypes and a control group with regard to adaptive functioning, etiologic, and family history of psychiatric illness variables. Though some of our hypotheses about differences between the subtypes were not supported via the contrast analyses (e.g., psychotherapy effectiveness), other hypotheses were supported and some interesting inter-subtype patterns emerged. In terms of adaptive functioning, the socially withdrawn group demonstrated the worst functioning, both globally and at school. These adolescents may struggle the most due to the combination of pathology from both externalizing problems and the internalizing problems described by the Q-Factor analysis. Perhaps not surprisingly, the psychopathic-like adolescents had the highest ratings of externalizing behavior, early-onset severe externalizing pathology, and familial criminal behavior.

The emotionally dysregulated group demonstrated the consistently poorest etiologic background as well as a strong familial background of both suicidality and alcoholism. These results suggest that emotionally dysregulated adolescents may be the most vulnerable due to childhood experiences and genetic loading. In contrast to our hypotheses, the impulsive-histrionic group (instead of the psychopathic-like group) had the lowest frequency of familial anxiety disorders. Lynam (1997, 1998) found that impulsivity is one of several characteristics that identifies a severe subset of antisocial youth, fledgling psychopaths. As the impulsive-histrionic group also had high rates of familial criminal behavior and externalizing behavior pathology these adolescents may be similar to the psychopathic-like group, but present clinically with more sexual and relationship problems. The finding that the control group had the highest rating for psychotherapy effectiveness highlights the need for early and accurate diagnosis of adolescent antisocial behavior to bolster clinician's ability to effectively treat such issues.

The results of the contrast analyses pertaining to comorbidity supported the use of an adolescent APD diagnosis. A majority of adolescents from all five APD subtypes met diagnostic criteria for ODD and CD. This finding demonstrates that there is significant clinical overlap between the APD, CD, and ODD diagnoses, and that, albeit preliminary, separate age-based diagnostic categories may not be necessary. In addition, all five subtype

groups demonstrated very low rates of Generalized Anxiety Disorder (GAD). While low anxiety, guilt, and remorse as well as shallow emotions (Salekin, Rogers, & Machin, 2001) have been associated with child psychopathy, the finding that GAD diagnoses were infrequent across the five subgroups was surprising and should be examined further.

Similar to previous findings which supported supplementing the current disruptive behavior diagnoses (Lynam, 1997; Salekin et al., 2004), the results from the first set of regression analyses indicated that adding the APD diagnosis to the current diagnostic system (ODD, CD, and ADHD) provided a significant increase in the explained variance. Further, when APD symptoms were controlled, the beta weights of the four current diagnostic categories (ODD, CD, and the two ADHD diagnoses) decreased and failed to predict our three outcome variables. This suggests that not only does APD add clinically valid information on adolescent delinquency or disruptive behavior, but that it may do so better than the four current diagnoses. As there was no consistent pattern of which diagnoses in Step 2 failed to significantly contribute to the regression equation (i.e., one diagnosis may have significantly predicted one variable but failed to significantly predict another), we suggest further research examining the clinical utility of the current diagnostic system, and whether supplementing the current diagnostic system with additional diagnoses may be helpful for explaining clinical heterogeneity.

The second set of regression analyses tested whether the personality-based subtypes of adolescent APD provided incremental validity over the current diagnostic system. Similar to the first set of regression analyses, we found that the five APD subtypes were significantly predictive after controlling for the current DSM-IV disorders. In fact, when predicting global adaptive functioning, arrests, and quality of peer relationships, only CD diagnosis was significantly predictive of global adaptive functioning and arrests in Step 2. Supplementing ODD, CD, and ADHD diagnoses with the five personality subtypes was highly predictive. These regression analyses support the notion that adolescent disruptive behavior is a heterogeneous construct, and that personality-based subtyping may be beneficial to conceptualizations of this form of pathology.

CLINICAL IMPLICATIONS

The results of the present paper suggest that within the group of adolescents who meet diagnostic criteria for an APD diagnosis significant heterogeneity exists across personality dimensions as well as criterion variables (e.g., etiologic variables and family history of mental illness). Though preliminary, these differences may indicate that different types of APD adolescents should be clinically conceptualized, and ultimately treated, uniquely. For example, treatment of an APD adolescent demonstrating problems with emotional regulation may require a different treatment strategy than an APD adolescent with psychopathy-like traits. Though the current find-

ings supported the notion that some adolescents demonstrate personality patterns similar to APD adults, additional research is required to investigate both developmental and longitudinal issues pertaining to this diagnosis prior to using such a diagnosis in applied settings.

LIMITATIONS

The study has several limitations. We used data provided by a single informant (the treating clinician), which may create biases in patient descriptions and characteristics. However, many of the variables were categorical (yes or no) and did not require judgment; items pertaining to whether an adolescent had been placed in foster care or if an adolescent tortured animals are not subject to clinician response bias. Also, clinicians are more familiar with disorders such as ODD and CD when describing adolescent antisocial behavior, and the DSM-IV-TR explicitly instructs clinicians not to apply the APD diagnosis to adolescents. Thus, any biases in this study would have worked in favor of the current diagnoses, suggesting that our results may actually under-represent the potential value of the APD diagnosis and its subtypes for both clinical work and research. Further, the clinicians in the study were unaware of the five subtypes that we derived, and the subtypes were better predictors than the disruptive behavior disorder diagnoses as well as the APD diagnosis. Finally, recent studies correlating SWAP data with criterion variables coded independently by other informants (e.g., self-reports, a second, blind interviewer) have produced validity coefficients of the same magnitude as those produced when the same informant provides both sorts of information (e.g., SWAP psychopathy correlates in the range of $r = .40–.55$ with self-reported history of arrests or antisocial traits and with interviewer-based assessments of history of violence and poor adaptive functioning; see Westen & Shedler, 2007).

As this is one of the first attempts to examine the downward extension of APD from adults to adolescents, future research should be undertaken to thoroughly understand the clinical implications of such a diagnostic change. Longitudinal research is warranted to track the development and maturation of adolescents who meet diagnostic criteria for APD and who strongly match the empirically derived APD diagnostic prototypes and determine the percent who become APD adults.

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