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Course of Antisocial Behavior during Emerging Adulthood: Developmental Differences in Personality

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Abstract

Despite similar normative changes in antisocial behavior (AB) and traits of disinhibition and negative emotionality during “emerging adulthood,” few studies have tested if there are developmental differences in personality over this period for distinct courses of AB. In a college cohort assessed at ages 18 and 25, we examined if mean-level changes on traits from the Tridimensional Personality Questionnaire varied by course of AB. Compared to persisters, those who desisted in AB from 18 to 25 exhibited a larger decrease on novelty seeking and larger increase on reward dependence. A significant mean-level decline was observed for harm avoidance, but was unrelated to AB course. Findings support theories of the co-development of personality and AB during emerging adulthood.

Keywords

Antisocial Behavior; Personality Development; Tridimensional Personality Questionnaire; Emerging Adulthood

The developmental stage of “emerging adulthood” (roughly ages 18 to 25; Arnett, 2000) is marked by significant psychological changes. One of the most robust trends during this period is the normative pattern of desistance in antisocial behavior (AB). Notably, personality correlates of AB (i.e., disinhibition, negative emotionality; Miller & Lynam, 2001) also exhibit substantial mean-level declines from late adolescence to early adulthood (Blonigen, Carlson, Hicks, Krueger, & Iacono, 2008). Despite parallels in their normative trends during this timeframe, few studies have tested whether there are differences in personality development between those who follow a normative vs. non-normative course of

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AB. Using a prospective design, this study investigated whether changes in personality, as measured by the Tridimensional Personality Questionnaire (TPQ), vary by course of AB during emerging adulthood.

Course of Antisocial Behavior and Personality during Emerging Adulthood

AB declines sharply during the transition into adulthood. This phenomenon is a key component of the age-crime curve, and is robust across different ethnicities, nationalities, and historical periods (Hirschi & Gottfredson, 1983). Various theories have been proposed to account for this developmental trend; however, most have neglected or dismissed the role of individual differences in personality (Gottfredson & Hirschi, 1990). This perspective is likely based on traditional conceptions of traits as enduring patterns of cognition, affect, and behavior. However, contemporary models espouse a dynamic perspective of personality given evidence that several traits exhibit significant mean-level changes over time (Caspi, Roberts, & Shiner, 2005). These changes are most pronounced during emerging adulthood and reflect a normative pattern of psychological “maturity” in the form of reduced disinhibition and negative emotionality.

Recently, Blonigen (2010) articulated a theory of the *co-development* of personality and AB during emerging adulthood, and posited that declines in AB during this timeframe are underpinned by mean-level changes in disinhibition and negative emotionality. Although plausible given correspondence in their normative trends, this theory must also account for variability in the course of AB. Most notably, Moffitt (1993) distinguished between “adolescence-limited” antisocials who engage in AB in late adolescence but desist in early adulthood, and “life-course persistent” antisocials who engage in AB throughout this period. Other developmental subtypes of AB have been proposed, including a late-onset group marked by AB in early adulthood that is minimal or absent in adolescence; however, the distinction between desistence and persistence has garnered the most empirical support.

Per a co-developmental model of personality and AB, patterns of personality change during emerging adulthood would be predicted to vary across different courses of AB. Specifically, those who persist in AB may fail to decline in their level of disinhibition and negative emotionality (or decline to a lesser degree) than those who desist in AB. To our knowledge, few studies have directly tested this hypothesis; however, research on developmental subtypes of personality and antisociality provide indirect support. Regarding personality, among boys (Morizot & Le Blanc, 2005) and girls from the community (Johnson, Hicks, McGue, & Iacono, 2007), subtypes marked by “delayed” or “blocked” maturation (i.e., relative stability in levels of disinhibition and negative emotionality from adolescence to adulthood) are highest in AB in adolescence and adulthood. Regarding antisociality, in a sample of juvenile offenders, Monahan et al. (2009) reported that, relative to desisters, those who followed a persistent AB trajectory from ages 14 to 22 failed to increase on indices of psychosocial maturity. The present investigation builds on this latter study by using a non-adjudicated sample and prospectively testing whether there are similar developmental differences across AB subtypes on traits from a structural model of personality.

Present Study

Using a mixed-gender cohort of college students that was enriched for family history of alcoholism and followed from ages 18 to 25, we tested whether there are different patterns of change in personality across distinct courses of AB during emerging adulthood. Of primary interest was whether those who follow a desistent course of AB exhibit larger declines on traits of disinhibition and negative emotionality than other AB courses (particularly persisters).

The constructs of disinhibition and negative emotionality were operationalized with the short form of the TPQ (Sher, Wood, Crews, & Vandiver, 1995), consisting of three independent dimensions of personality: *Novelty seeking* is primarily associated with disinhibition as indicated by positive correlations with Eysenck's Psychoticism scale (Sher et al., 1995) and negative correlations with Tellegen's Control scale (Waller, Lilienfeld, Tellegen, & Lykken, 1991); *Harm avoidance* is primarily linked to negative emotionality, given positive correlations with Eysenck's Neuroticism scale and Tellegen's Stress Reaction scale (Sher et al., 1995; Waller et al., 1991); *Reward dependence* is associated primarily with positive emotionality, given positive correlations with that factor from Tellegen's model and Eysenck's Extraversion scale (Waller et al., 2001), but also overlaps with disinhibition as indicated by negative correlations with Eysenck's Psychoticism scale (Sher et al., 1995). Notably, this study is among the first to examine normative developmental trends for these TPQ dimensions during emerging adulthood. We expected significant mean-level decreases for novelty seeking and harm avoidance, and a significant increase for reward dependence, with each of these patterns of change more prominent for desisters than other AB courses.

Methods

Participants

Data were taken from a longitudinal study on family history of alcoholism (see Sher, Walitzer, Wood, & Brent, 1991). The baseline sample comprised 489 first-year college students (46% male, mean age = 18.2) from a Midwestern university. Approximately half of respondents (51%) were classified as "family history positive." Respondents were assessed at seven time points (ages 18, 19, 20, 21, 25, 29, 35) by interview and paper-and-pencil questionnaires. For this study, data were taken from ages 18 and 25, given that consistent measures of AB and personality were limited to these measurement occasions. Over 93% of participants were retained over the first 7 years of the study. Compared to participants at age 25, attriters ($n = 32$) did not differ significantly in their rate of AB or mean scores on the three TPQ dimensions at age 18.

Measures

Antisocial Behavior—A dichotomous past-year measure of AB was created from the antisocial personality disorder module from the Diagnostic Interview Schedule (DIS) – Version III-A (Robins et al., 1985) and Version III-R (Robins et al., 1989) were administered at ages 18 and 25, respectively. On both occasions, participants were asked 23 items related to AB (e.g., "Have you ever used a weapon like a stick, knife, or gun, in a fight since you were 18?"). Only participants who endorsed three or more items were asked how recently the behaviors occurred (age of recency was not asked separately for each behavior). At each time point, participants who reported that these behaviors occurred within the past 12 months were coded "1." All other participants (with non-missing data) were coded "0".

Personality—The 44-item Short-TPQ (Sher et al., 1995) was used to measure the dimensions of novelty seeking (e.g., "I do things based on how I feel without thinking about how they were done in the past"), harm avoidance (e.g., "I often stop what I am doing because I worry about what might go wrong"), and reward dependence (e.g., "I discuss my experiences and feelings openly with friends"). Internal consistency (α) was .74 or greater for all measures at both time points.

Analytic Framework

Using the AB variables, four groups were formed *a priori*. The "No AB" group ($n = 402$) consisted of individuals coded "0" on the AB measure at ages 18 and 25. The "desistent"

group ($n = 11$) consisted of individuals coded “1” on the AB measure at age 18 and “0” on this measure at age 25. The “late onset” group ($n = 35$) comprised individuals coded “0” at age 18 and “1” at age 25 on the AB measure. The “persistent” group ($n = 9$) consisted of individuals coded “1” on the AB measure at both time points.

For the primary analyses, repeated measures analyses were conducted using SAS PROC MIXED to examine mean-level change in the TPQ personality measures, and mean-level changes in personality by AB group status (Wave x AB group). In line with Moffitt’s taxonomy, we were particularly interested in comparisons between the desistent and persistent AB groups. Cross-sectional differences at each Wave between the desisters and the No AB group were also conducted (the small size of the desistent, persistent, and late-onset AB groups limited the power to detect cross-sectional differences between these groups). Sex was modeled as a fixed covariate in all analyses.

Results

Intercorrelations between TPQ Personality, Antisocial Behavior, and Sex

Zero-order correlations among the TPQ dimensions, past-year AB, and sex are shown in Table 1. At ages 18 and 25, novelty seeking was positively associated with AB, whereas reward dependence was negatively associated with AB. Harm avoidance was unrelated to AB at both time points. Compared to males, females had lower levels of novelty seeking and AB, and higher levels of harm avoidance and reward dependence at each Wave.

Developmental Differences in Personality by Antisocial Behavior Group

Novelty Seeking—The main effect for Wave was significant, such that novelty seeking significantly decreased from ages 18 to 25, $F(1, 452) = 40.02, p < .0001 (d = -.54)$. Further, the Wave x AB group interaction was significant, $F(3, 452) = 2.95, p < .05$. Follow-up contrasts revealed that desisters, compared to all other AB groups, exhibited the steepest decreases in novelty seeking from ages 18 to 25, $F(1, 452) = 6.35, p = .01$ (see Figure 1). Compared to persisters, desisters exhibited significantly sharper decreases across this timeframe, $F(1, 476) = 6.05, p = .01$. Consistent with these findings, cross-sectional tests showed that desisters exhibited significantly higher levels of novelty seeking than the No AB group at age 18 ($p < .01$), but not age 25 ($p = .57$). Notably, after removing an item from the novelty seeking measure that may reflect criterion contamination with AB (“I often break rules and regulations when I think I can get away with it”), the results were essentially identical.

Harm Avoidance—There was a significant main effect for Wave, such that harm avoidance decreased from ages 18 to 25, $F(1, 452) = 10.18, p < .002 (d = -.35)$. However, the Wave x AB group interaction was nonsignificant, $F(3, 452) = 0.12, p = .95$. Desisters did not differ significantly in terms of change on harm avoidance in comparison to all other groups combined, $F(1, 452) = 0.07, p = .79$, or to persisters per se, $F(1, 452) = 0.04, p = .85$. Cross-sectional tests suggested that the desisters did not differ significantly from the No AB group at either Wave.

Reward Dependence—There was a nonsignificant statistical trend for the main effect of Wave from ages 18 to 25, $F(1, 452) = 3.32, p = .07 (d = .03)$, and a nonsignificant Wave x AB group interaction, $F(3, 452) = 1.92, p = .13$. However, hypothesis-driven contrast analyses indicated that, relative to the other AB groups, desisters increased in reward dependence from ages 18–25, $F(1, 452) = 4.13, p < .05$. Further, desisters exhibited significantly greater increases in reward dependence than persisters, $F(1, 452) = 4.64, p < .05$. Cross-sectional findings suggested that desisters exhibited a nonsignificant trend for

lower levels of reward dependence at age 18 compared to the No AB group ($p = .08$) but was not significantly different at age 25 ($p = .33$).

Discussion

In a large cohort of college students, we examined whether personality development differed across distinct courses of AB from ages 18 to age 25. Antisocial participants scored higher on novelty seeking at both time points, and antisocial and non-antisocial participants exhibited similar declines in novelty seeking over this period. However, among those who were antisocial in late adolescence, the desisters exhibited the greatest declines in novelty seeking such that by early adulthood their mean level on this trait was indistinguishable from the non-AB group.

Harm avoidance decreased significantly at the mean-level from ages 18 to 25, but was unrelated to AB at either age and did not differ across the AB groups in terms of development. By contrast, reward dependence remained stable over time at the mean-level and was negatively correlated with AB at age 18. Follow-up analyses revealed that the association between reward dependence and AB in late adolescence was due to low scores on this trait for the desisters. Notably, the desisters increased in reward dependence from ages 18 to 25, further evidence that those who desist from AB during emerging adulthood exhibit a pattern of personality development that differs from other AB courses, and in a direction marked by increasing psychological maturity.

Our results are consistent with previous findings in terms of normative changes in personality during emerging adulthood, and the association between personality and AB. Specifically, traits of disinhibition (novelty seeking) and negative emotionality (harm avoidance) declined from late adolescence to early adulthood (Blonigen et al., 2008), and AB was associated with disinhibition at both time points (Miller & Lynam, 2001). However, in contrast with these studies, we did not detect an association between AB and negative emotionality. This may be due to harm avoidance being more a measure of stress reaction and neuroticism facets of negative emotionality (as measured in Big Three and Big Five models, respectively) rather than the anger-hostility and alienation facets that are most strongly linked to AB. Regarding reward dependence, the association between these traits and AB in late adolescence is consistent with the overlap between these traits and indicators of disinhibition (Sher et al., 1995). Furthermore, the significant increase on this measure for desisters is consistent with prior research revealing (a) overlap between reward dependence and Tellegen's construct of achievement (Waller et al., 2001), and (b) normative increases in achievement from late adolescence to early adulthood (Blonigen et al., 2008).

A key contribution of the present work was the extension of prior cross-sectional findings between traits and AB to analysis of differences in personality development by course of AB. AB is most strongly associated with disinhibition; thus, differences in personality development were primarily observed for these traits. Notably, antisocial individuals do not "fail" to exhibit normative declines in disinhibition; rather the changes are accelerated for individuals who desist from AB. That is, desisters are able to "catch up" to their non-antisocial peers such that their level of psychological maturity is likely sufficient to meet age-relevant developmental tasks. Additionally, desisters increase in reward dependence after exhibiting the lowest scores at age 18. This change might reflect a transition from low ambition at age 18 to greater investment in age-graded social roles at age 25 (e.g., marriage, parenthood, employment). Alternatively, extensive neurobiological maturation of the prefrontal cortex also occurs over this period and, in concert with sociological mechanisms, may account for the normative changes in personality and AB during emerging adulthood (Blonigen, 2010).

A substantial gap, however, remains between persistent antisocials and their non-antisocial peers. This suggests that despite normative declines in disinhibition, persisters still lack the necessary psychological maturity to successfully meet the increasingly complex developmental tasks of adulthood. These results are consistent with research on the effect of persistence versus desistance in substance abuse (Littlefield, Sher, & Wood, 2009) and overall psychosocial adjustment for normative and non-normative patterns of personality development (Johnson et al., 2007).

The current investigation has some limitations. First, our college cohort may not be representative of the population of interest. Although the enrichment of participants with a family history of alcoholism may have increased the rate of AB in this sample relative to the general population, the majority of AB persisters are not likely to have enrolled in college. These factors may explain the unusually large number of late onset cases in our high-risk sample (relative to persisters and desisters), and call for replication of the present findings in community-epidemiological samples. Second, our assessment of AB at ages 18 and 25 was limited to the past 12 months, and precluded assessment of change using a dimensional measure (i.e., symptom counts). Rather, participants were assigned to groups based on whether they endorsed three or more AB items at ages 18 and 25. Consequently, this limited our sample sizes for the groups of paramount interest (i.e., persisters and desisters) and likely reduced our power to detect group differences overall. Third, available data on personality and AB was limited to two time points. Future studies with three or more time points would allow the fit of growth curves to AB and personality data to elucidate how the initial status and change in one variable may impact change in the other. Fourth, we utilized a short form of the TPQ, which precluded a more fine-grained examination of mean-level change in the facets that comprise the higher-order dimensions from Cloninger's (1987) biopsychosocial model of personality.

These limitations notwithstanding, the present study serves as an important step in a broader program of research that seeks to explicate the co-development of personality and AB during emerging adulthood. From here, it will be important to replicate the present findings with more contemporary structural models of personality, and to test both sociological (e.g., age-graded social roles) and biological (e.g., neurobiological maturation) mechanisms that may account for the larger declines in novelty seeking among desisters. Such findings will broaden our understanding of how personality, biopsychosocial processes, and their interplay can influence the course of AB during emerging adulthood.

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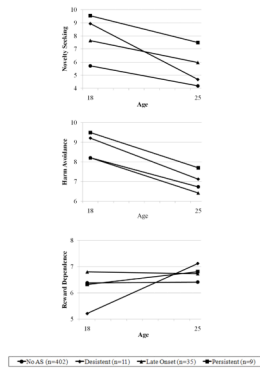


Figure 1. Mean-level Changes in Novelty Seeking, Harm Avoidance, and Reward Dependence by Antisocial Behavior Group.

Table 1
Zero-Order Correlations between TPQ Personality, Antisocial Behavior, and Sex.

	1	2	3	4	5	6	7	8	9
1. Novelty Seeking Age 18	--								
2. Harm Avoidance Age 18	-0.02	--							
3. Reward Dependence Age 18	-0.08	-0.13*	--						
4. Antisocial Behaviors Age 18	0.48*	0.02	-0.22*	--					
5. Novelty Seeking Age 25	0.51*	-0.04	-0.13*	0.27*	--				
6. Harm Avoidance Age 25	0.07	0.49*	-0.01	-0.01	0.01	--			
7. Reward Dependence Age 25	-0.02	-0.05	0.40*	-0.00	-0.04	-0.14*	--		
8. Antisocial Behaviors Age 25	0.37*	-0.04	0.01	0.57*	0.36*	-0.07	-0.01	--	
9. Sex (1 = Female)	-0.16*	0.16*	0.40*	-0.47*	-0.22*	0.35*	0.32*	-0.32*	--

Notes. $N = 457$. TPQ = Tridimensional personality questionnaire. Correlations between TPQ measures = Pearson product moment correlation. Correlations between sex and antisocial behaviors = tetrachoric correlation. Correlations between TPQ measures and sex or antisocial behaviors = biserial correlation.

* $p < .01$.