Volitional Change in Pathological Traits: Can People Change Their Maladaptive Traits?

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Abstract

Research suggests people want to change their normative personality traits—and they can volitionally do so. However, studies have not yet addressed volitional change in pathological personality. Consequently, the current study examined (a) people's desires to change pathological traits, (b) whether these change goals predict subsequent trait change, (c) whether this withstands controlling normative traits, and (d) the extent to which pathological trait change predicts relevant outcomes. College students (N = 463) self-reported their pathological traits weekly for up to 16 weeks. People with elevated pathological traits generally desired to decrease these traits. Furthermore, goals to change negative affectivity and disinhibition predicted corresponding trait change. Thus, people want to reduce their pathological traits—and they may be able to do so for some traits.

Keywords

volitional change, adult personality development, personality pathology, personality change

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Currently, the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association [APA], 2013) classifies personality disorders as discrete categories. Within the past few decades, however, psychologists have increasingly emphasized that personality disorders are more accurately defined by combinations of continuous, pathological personality *traits*—as opposed to dichotomous diagnoses (e.g., Krueger et al., 2012; Suzuki et al., 2015; Widiger, 2011). Given this shift toward a dimensional approach, it is important to revisit the stability of personality pathology and potential reasons why pathological traits might change. Namely, research suggests that pathological personality can change (e.g., via medication and clinical intervention; Ingenhoven et al., 2010; Kool et al., 2003; Vaslamatzis et al., 2014). Moreover, studies have found that people want to change their pathological traits (J. D. Miller et al., 2018; Sleep et al., 2019, 2022). This raises an important question: Can people change their pathological traits simply because they desire to do so?

Accordingly, no studies have examined whether desires to change pathological traits predict actual subsequent trait change. The present study was designed to address this gap in the literature by investigating (a) whether people want to change their pathological traits, (b) whether people change in ways that align with their desires, (c) whether this is discriminant from growth¹ in the Big Five, and (d) whether changes in pathological traits predict concurrent changes in relevant outcomes. All told, our findings may have important implications concerning the malleability of pathological traits.

Five-Factor Model of Pathological Personality

The *DSM-5* classifies personality disorders as discrete categorical diagnoses (APA, 2013). As an increasingly-popular alternative, the five-factor model of pathological personality conceptualizes personality disorders as a combination of dimensional pathological traits (Krueger et al., 2012; Suzuki et al., 2015; Widiger, 2011). The five pathological traits negative affectivity, disinhibition, detachment, antagonism, and psychoticism—are associated with impairment in selfand/or interpersonal functioning (J. D. Miller et al., 2018;

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Wright et al., 2012, 2015). These pathological traits can be viewed as conceptually similar to maladaptive extremes of the Big Five (i.e., negative affectivity vs. emotional stability, disinhibition vs. conscientiousness, detachment vs. extraversion, antagonism vs. agreeableness, psychoticsism vs. openness; Suzuki et al., 2015; Widiger, 2003; Widiger & Samuel, 2005; Widiger & Trull, 2007). Nevertheless, numerous studies have found that correlations between pathological and normative traits are low enough to indicate discriminancy from one another (Góngora & Castro Solano, 2017; Suzuki et al., 2015; Thomas et al., 2013). Indeed, the pathological five are distinct from normative traits due to their severity, ability to capture symptoms of personality disorders, and predictiveness of outcomes beyond normative traits (Altschuler & Krueger, 2021; Hopwood, 2011; Morey et al., 2022; Tackett et al., 2009). Thus, it is ideal to measure both pathological and normative traits to fully capture individuals (Hopwood, 2011).

Beyond being defined by impairment, traditional/categorical personality disorders are characterized by pervasiveness and stability (APA, 2013; Clark, 2009). However, few studies have addressed the stability of personality pathology using the dimensional five-factor model. The limited existing literature suggests all five pathological traits exhibit high stability (Rodriguez-Seijas et al., 2020; Wright et al., 2015; Wright & Simms, 2016). Consequently, further research is needed to understand stability in pathological traits—and why they might change. Accordingly, we explored the extent to which pathological traits are stable—and one potential predictor of change in pathological traits: people's desires to change their own traits.

Desires to Change Pathological Personality

Prior research suggests that pathological traits—historically measured as dimensional assessments of personality disorders (e.g., continuous measures of borderline personality; as opposed to the five-factor model)—can change, both naturalistically and as a result of clinical treatments (e.g., therapy) and/or medication (Ingenhoven et al., 2010; Kool et al., 2003; Vaslamatzis et al., 2014). However, one factor that may contribute to pathological trait change that has not yet been explored is people's desire to change their own traits. To this end, research on the Big Five suggests that most people want to change their personality to some extent. Namely, people want to increase each normative trait—and these desires are strongest for extraversion, emotional stability, and conscientiousness (Baranski et al., 2017; Hudson & Fraley, 2016b; Hudson & Roberts, 2014).

Despite that people want to change normative Big Five traits, the literature is somewhat mixed with respect to whether people want to change their pathological traits. On one hand, although people seem aware of their pathological traits (e.g., there is high agreement between self- and observer-ratings; Klonsky et al., 2002; Oltmanns & Strauss, 1998; Thomas et al., 2013), some scholars have characterized pathological traits as ego-syntonic (i.e., acceptable to those who possess them). For example, when asked to rate the desirability of pathological traits, one study found that people with elevated pathological trait levels rated high levels of the pathological traits as being merely "neutral." In contrast, individuals who were lower in the traits rated high levels of pathological traits as actively dislikeable (Lamkin et al., 2018). Similarly, people with higher pathological traits may lack insight into the severity of their traits and/or the extent to which they are impaired by them (e.g., Carlson & Oltmanns, 2015; Klonsky et al., 2002; Sleep et al., 2019).

On the other hand, a growing body of literature suggests that people with elevated pathological traits do recognize that these traits cause impairment (J. D. Miller et al., 2018; Sleep et al., 2019)—and this is particularly true of negative affectivity, detachment, and disinhibition (J. D. Miller et al., 2018). Moreover, research suggests that, when directly asked, most people with elevated pathological traits want to decrease the traits (J. D. Miller et al., 2018; Sleep et al., 2019, 2022)—and these desires are particularly strong for negative affectivity, detachment, and disinhibition (Sleep et al., 2022). Collectively, these findings align with research on normative traits. Namely, studies suggest that most people want to change their Big Five traits, and one reason for doing so is to improve their lives (e.g., people may want to become more extraverted to assuage dissatisfaction with their social lives; Hudson & Roberts, 2014; Kiecolt, 1994). Thus-as with the Big Five-people may want to change their pathological traits to reduce perceived impairments associated with each trait (e.g., J. D. Miller et al., 2018).

In sum, given the small and somewhat mixed empirical literature on desires to change pathological traits (especially using the five-factor model), further research is needed to understand the extent to which people want to change these traits (e.g., J. D. Miller et al., 2018). This also raises the question as to whether they can actually volitionally change these traits.

Volitional Change in Pathological Traits

People may want to change their pathological traits—but can they do so? Modern personality theories propose that trait development occurs when people change their thoughts, feelings, or behaviors over extended periods of time (Roberts, 2018; Roberts & Jackson, 2008; Wrzus et al., 2017). To this end, theorists have recently postulated that trait development can be facilitated by intrapsychic factors, such as people's desires to change their own personality (e.g., Hudson & Fraley, 2015; Hudson & Roberts, 2014). Indeed, research on the Big Five shows that people who wish to change their traits tend to actually change in ways that align with their desires (e.g., Hudson, Fraley, et al., 2020). For example, people who want to become more extraverted tend to actually increase in extraversion across time, relative to their peers who do not wish to change.

How can people change their traits? Intervention studies suggest one viable strategy is simply changing one's own thoughts, feelings, and behaviors over long periods of time (Hudson, 2021; Hudson et al., 2019; Stieger et al., 2021). For instance, regularly engaging in more extraverted behaviors leads to increases in trait extraversion. Similar findings have emerged for attachment styles and the Dark Triad (Hudson, 2023; Hudson, Chopik, & Briley, 2020). Indeed, even sans professional intervention, laypersons who desire trait change may be intuitively aware of how to change themselves (Quinlan et al., 2006; Stevenson & Clegg, 2011). For instance, in one study, college students who feared becoming boring adults actively engaged in risky behaviors such as binge drinking—ostensibly in attempt to become more fun and interesting persons (Quinlan et al., 2006). Thus, people seem to naturalistically engage in behaviors designed to change their traits-and research suggests that behavioral change is indeed an effective avenue for promoting growth in normative traits (Hudson et al., 2019; Stieger et al., 2021).

Although studies have explored volitional change in normative traits, few studies have investigated the extent to which desires to change pathological traits might also predict corresponding change. Thus, the goal of the present study was to examine (a) whether people want to change their pathological traits and (b) whether desires to change pathological traits predict subsequent corresponding trait change. What should we expect to find? On one hand, categorical personality disorders and dimensional pathological personality traits can and do change in response to professional interventions, such as therapy or medication (e.g., Ingenhoven et al., 2010; Kool et al., 2003; Vaslamatzis et al., 2014). For example, one study found that adults diagnosed with personality disorders reported significant decreases in negative affectivity, detachment, disinhibition, and psychoticism after a 6-month intervention (Torres-Soto et al., 2021). Thus, it may be the case that-like the Big Five-individuals are motivated to change their pathological traits (e.g., J. D. Miller et al., 2018), and they may intuitively understand how to do so (e.g., by engaging in behavioral changes that imitate the types of changes encouraged in therapy; Hudson et al., 2019). If this is the case, individuals' desires to change their pathological traits may predict actual changes in the selfreported traits across time.

On the other hand, prior research suggests that pathological traits may be difficult for individuals to naturalistically change (i.e., without professional help). For instance, one study found pathological traits were highly stable across 18 months (Wright et al., 2015). Thus, individuals may struggle to change their pathological traits without professional intervention. This may occur because individuals with elevated pathological traits view these traits more favorably compared to those who do not possess them (e.g., Lamkin et al., 2018) and thus are not motivated to change. Even if individuals do wish to change their pathological traits, the impairing nature of the traits may prevent them from successfully implementing strategies to do so (e.g., actually changing their behavior) without professional assistance. For example, despite that laypersons seem able to reason about how to change extraversion and implement strategies to do so (e.g., Quinlan et al., 2006), the severity and impairments associated with detachment might prevent laypersons high in the trait from being able to generate viable strategies to change (e.g., because detachment may entail lack of insight into how to remedy social deficiencies). Even if these individuals do generate strategies for change, the pathological nature of detachment may involve a lack of skills needed to successfully implement these strategies (e.g., therapy for personality pathology frequently focuses on remedying skill deficiencies; Hopwood, 2018).

Overview of the Present Study

The present study was a 16-wave longitudinal study in which participants completed weekly self-reports of their pathological traits, desires to change, and theoretically-relevant outcomes. We used these data to examine (a) whether people wanted to change their pathological traits, (b) the extent to which pathological traits changed as a function of these change goals, (c) if these changes withstood controlling for the Big Five, and (d) how changes in pathological traits were associated with relevant outcomes.

What We Expect to Find

Given that pathological traits predict self- and social-dysfunction (e.g., APA, 2013; Krueger et al., 2012; Wilson et al., 2018; Wright et al., 2015), and are viewed as unlikable and impairing (J. D. Miller et al., 2018; Sleep et al., 2019, 2022), we expected that individuals would report desires to decrease each pathological trait. Furthermore-although there is little research examining change in pathological traits-studies suggest that the normative Big Five traits change over timeoften in a more socially desirable direction-among subclinical samples (Hudson, Fraley, et al., 2020). Thus, we expected our subclinical sample to similarly report changes in the pathological traits. In addition, research suggests that people can change their normative Big Five personality traits in ways that align with their desires (e.g., Hudson, Fraley, et al., 2020)—and this is especially true of extraversion, conscientiousness, and emotional stability. Thus, we expected that people's goals to change pathological traits would predict change in the respective traits-and effects might be strongest for detachment, disinhibition, and negative affectivity. Moreover, we expected these effects to withstand controlling for the Big Five. Finally, we expected changes in pathological traits to negatively correlate with self- and interpersonaloutcomes, given that pathological traits predict self- and

social-impairment (e.g., APA, 2013; Krueger et al., 2012; Wilson et al., 2018; Wright et al., 2015).

Method

Open Science

This study was not preregistered. An abridged dataset containing select study variables and materials can be found on Open Science Framework (OSF; https://osf.io/8mjqs/).

Participants

Participants were recruited from psychology courses at multiple universities and participated for course credit. Participants registered an account on the study website. Students were instructed to complete one wave of the study each week during the 16-week semester. However, to afford flexibility, participants could complete waves as often as once every 5 days. Although participants were required to wait 5 days between waves, they were free to complete waves at their own pace. Consequently, our statistical models consider *time* (i.e., months since the participant started the study) as a primary predictor, rather than *wave number*.

Data were collected from 467 participants. Data were collected for only one semester; thus, total sample size was determined by enrollment in the participating courses. Power analyses revealed that this sample size afforded more than 99% power to detect average-sized effects in simple correlational analyses (equivalent to $r \sim .21$; Richard et al., 2003).² A Monte Carlo simulation using parameter estimates from research on the Big Five (Hudson, Fraley, et al., 2020) suggested our sample size afforded approximately 70% power in multilevel modeling analyses to detect the expected effects for change goals predicting trait growth (i.e., the Month × Change Goals parameter described below) for traits similar to extraversion and emotional stability (Muthén & Muthén, 2002).

Some participants were younger than 18 at the start of the study—and therefore were excluded from analyses until they turned 18. The final sample at Wave 1 consisted of 463 participants. Ages ranged from 18 to 34 (M = 19.73, SD = 1.43). The sample was 68% female. Participants were asked to select all racial/ethnic groups with which they identified. The breakdown was: White (72.57%), Asian American (15.12%), Hispanic or Latino (9.50%), Black or African American (6.91%), Indian (2.81%), Middle Eastern (2.16%), Native American (1.73%), Pacific Islander (1.30%), and/or other (0.43%).

Participants completed an average of 12.72 waves (SD = 3.88). There were 419 (89.84%) participants in Wave 2, 352 (76.03%) in Wave 5, 257 (55.50%) in Wave 10, and 101 (21.81%) in Wave 16. Attrition analyses revealed that participants were more likely to complete more waves if they

were, at Wave 1, more conscientious (r = .30, 95% CI [.21, .38]), less disinhibited (r = -.25, 95% CI [-.33, -.16]), and less psychotic (r = -.16, 95% CI [-.25, -.07]). No other variables statistically significantly predicted attrition (see Table S1 in the Supplemental Materials; https://osf. io/8mjgs/).

Measures

Pathological Personality Traits. Participants self-reported their pathological traits using the 25-item brief form of the Personality Assessment Inventory (PID-BF; Krueger et al., 2013). The PID-BF includes subscales that measure detachment (e.g., "I'm not interested in making friends"), negative affectivity (e.g., "I worry about almost every-thing"), disinhibition (e.g., "I'm not good at planning ahead"), antagonism (e.g., "I use people to get what I want"), and psychoticism (e.g., "I have seen things that weren't really there"). Participants rated each item using a 5-point scale from *strongly disagree* (1) to *strongly agree* (5). Scores were averaged to form separate composites for all variables (Wave 1 α s ranged from .63 [antagonism] to .80 [disinhibition]).

Pathological Personality Change Goals. Participants reported goals to change pathological traits only at Wave 1. Change goals were measured by modifying each item of the PID-BF such that each item began with "I want to be someone who. . ." (e.g., "I want to be someone who worries about almost everything"). Items were rated on a scale ranging from *much less than I currently am* (-2), *I do not want to change in this* (0), to *much more than I currently am* (2). Thus, participants could indicate goals to increase, decrease, or stay the same with respect to each item. Items were averaged to form separate composites for each pathological trait (Wave 1 α s ranged from .64 [antagonism] to .75 [disinhibition]). Positive values for these composites represent goals to *increase* a trait, and negative values represent goals to *decrease* the trait.

Big Five Personality Traits. Participants self-reported their Big Five traits using the 30-item Big Five Inventory 2—Short Form (BFI-2-SF; Soto & John, 2017). The BFI-2-SF consists of five subscales that assess extraversion (e.g., "I am someone who is outgoing, sociable"), emotional stability (e.g., "I am someone who is relaxed, handles stress well"), conscientiousness (e.g., "I am someone who keeps things neat and tidy"), agreeableness (e.g., "I am someone who is compassionate, has a soft heart"), and openness (e.g., "I am someone who is complex, a deep thinker"). Participants responded to each item using a 5-point scale from *strongly disagree* (1) to *strongly agree* (5). Scores were averaged for each variable (Wave 1 α s ranged from .74 [openness] to .82 [emotional stability]).

Outcomes

Attachment. Participants reported their attachment style on even-numbered waves, using the 12-item Experiences in Close Relationships—Short Form (ECR-SF; Wei et al., 2007). The ECR-SF contains subscales for attachment anxiety (Wave 2 α = .76; e.g., "I need a lot of reassurance that I am loved by my partner") and attachment avoidance (α = .81; e.g., "I try to avoid getting too close to my partner"). Participants responded to each item using a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores were averaged for each variable.

Relationship Satisfaction. Participants rated their satisfaction with their romantic relationship on even-numbered waves—using a subscale of the Investment Model Scale (IMS; Rusbult et al., 1998). This subscale contained five items, rated from *strongly disagree* (1) to *strongly agree* (5). Items were averaged (Wave 2 α = .91). This variable was measured only for participants currently in a romantic relationship.

Well-Being. Participant's well-being was measured each wave with the 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985). Participants rated items from *strongly disagree* (1) to *strongly agree* (5). Items were averaged to form a composite (Wave 1 $\alpha = .79$).

Life Functioning. Life functioning was measured on odd waves via the Life Functioning Questionnaire (LFQ; Alt-shuler et al., 2002) and two subscales ("understanding and communicating" and "getting along with people") from the WHO Disability Assessment Schedule 2.0 (WHODAS; Üstün et al., 2010). The domains were family, friends, home, work, social, and cognitive functioning. Wave 1 α s ranged from .69 (friends) to .72 (cognitive). Participants rated each item from *strongly disagree* (1) to *strongly agree* (5).

Procedure

Participants received a link to the study. Participants completed up to 16 waves, once per week across the 16-week semester. To provide flexibility, each wave was made available 5 days after the previous wave. Other than this 5-day delay between waves, participants could complete waves at their own pace. Automated emails were sent to participants who waited longer than 7 days to complete the next wave.

Results

In the sections that follow, we report (1) the associations between change goals and pathological traits, (2) whether change goals predicted pathological trait change, (3) whether pathological trait changes withstood controlling the Big Five, and (4) whether pathological trait change predicted relevant outcomes (e.g., well-being).

Correlations Between PID-5 and Change Goals at Wave I

Descriptive statistics and correlations for traits and change goals are provided in Table 1. On average, participants wanted to decrease each pathological trait (*M*s ranged from -.77 [negative affectivity] to -.18 [antagonism]). Moreover, higher levels of negative affectivity were associated with the desire to decrease all five pathological personality traits (average r = -.24). Trait negative affectivity, detachment, disinhibition, and psychoticism were all negatively correlated with their respective change goal (average r = -.31, 95% CI [-.39, -.23]), suggesting that participants with elevated levels of these traits wished to reduce them. In contrast, trait antagonism was not statistically significantly related to antagonism change goals (r = .07, 95% CI [-.02, .16]).

Change Goals Predicting Trait Change

Do Change Goals Predict Change in Pathological Traits?. For our next analyses, we examined whether participants' goals to change their pathological traits predicted *actual* change in the corresponding self-reported trait. To do so, we conducted a series of multilevel models (MLMs), similar to those used in previous research (e.g., Hudson & Fraley, 2015). In each MLM, we examined within-person trajectories in one pathological trait as a function of people's goals to change that trait. These MLMs modeled traits for each participant, *p*, at wave, *w*, as a function of time and their change goals, e.g.:

$$Trait_{pw} = b_0 + b_1 (Month)_{pw} + b_2 (Change Goal)_p + b_3 (Change Goal)_p (Month)_{pw} + U_{p.} + \varepsilon_{pw}$$

In this model, pathological traits and change goals were standardized across the entire sample, and time was scaled in months³ (Ackerman et al., 2011). Thus, the b_1 coefficient represents how each trait increased or decreased over one month for participants with average change goals. In contrast, the b_3 coefficient indicates the extent to which a trait increased to a greater extent among those with higher desires to increase the trait, as compared to those with lower change goals. Thus, a positive b_3 coefficient would indicate that people's pathological traits changed in ways that aligned with their desires.

In terms of mean-level change, (see the "Month" parameter estimates in Table 2), participants with average change goals tended to increase in detachment (b = .03, 95% CI [.01, .04]) and antagonism (b = .06, 95% CI [.05, .08]), and decrease in psychoticism (b = -.08, 95% CI [-.10, -.07]) each month. There were no statistically significant changes in disinhibition and negative affectivity for people with average change goals (both bs < .01, 95% CI [-.00, .02]).

Next, we examined whether participants' change goals predicted subsequent change in their self-reported traits (see

							Co	rrelatio	ns							
-	М	SD	I	2	3	4	5	6	7	8	9	10	11	12	13	14
Traits																
I. Det	2.30	.70	_													
2. A	2.26	.63	.15	_												
3. Dis	2.32	.79	.23	.38	—											
4. NA	3.02	.78	.20	.13	22	—										
5. P	2.88	.78	.35	.18	.46	.40	_									
Change	e Goals															
6. Det	53	.54	2	.03	03	23	10	—								
7. A	18	.48	.08	.07	0 I	12	03	.31	—							
8. Dis	42	.57	07	12	35	13	13	.35	.48							
9. NA	77	.54	10	.03	04	52	14	.57	.37	.42	_					
10. P	38	.47	12	.06	14	19	17	.47	.42	.51	.53					
BFI-2	Traits															
11. E	3.41	.74	–.5 I	15	05	17	16	.19	14	04	.09	.07				
12. A	3.81	.65	40	5 I	24	10	14	.11	—.0 I	.06	.01	0 I	.14			
13. C	3.47	.72	22	22	66	17	37	0I	09	.22	.02	.12	.22	.20	—	
14. ES	2.97	.80	28	06	15	68	26	.26	.05	.11	.5 I	.19	.28	.11	.19	
15. O	3.73	.64	09	–.0 I	004	09	.15	06	04	05	08	.003	.11	.20	0 I	0I

Table I. Correlations Among Variables at Wave I.

Note. The 95% CIs for parameter estimates in **boldface** do not include zero. Det = Detachment; A = Antagonism; Dis = Disinhibition; NA = NegativeAffectivity; p = Psychoticism; E = Extraversion; A = agreeableness; C = conscientiousness; ES = emotional stability; O = openness.

Table 2. Changes in Pathological Personality Traits as a Function of Time and Change Goals.

								Outcom	nes						
		Det			А			Dis			Ν			Р	
	95% CI		95% CI		95% Cl			95% CI			95% CI				
Predictors	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB
Intercept	02	-0.10	0.06	07	-0.15	0.02	.09	0.01	0.17	.02	-0.06	0.09	.22	0.14	0.30
Month	.03	0.01	0.04	.06	0.05	0.08	.01	-0.00	0.02	.00	-0.01	0.01	08	-0.10	-0.07
Change Goal	19	-0.27	-0.10	.05	-0.03	0.14	32	-0.40	-0.25	49	-0.57	-0.42	18	-0.26	-0.10
$Month \times Change \; Goal$.00	-0.0 I	0.02	.00	-0.01	0.01	.02	0.01	0.04	.04	0.02	0.05	.00	-0.01	0.01

Note. The 95% Cls for parameter estimates in **boldface** do not include zero. Det = Detachment; A = Antagonism; Dis = Disinhibition; N = NegativeAffectivity; p = Psychoticism; Cl = Confidence Interval; LB = Lower Bound; UB = Upper Bound.

the Month × Change goals parameter estimates in Table 2). To that end, there was an interaction between time and change goals for disinhibition (interaction b = .02, 95% CI [.01, .04]) and negative affectivity (interaction b = .04, 95% CI [.02, .05]), such that personality traits changed over time in the direction of people's respective change goals (see Figures 1 and 2). To decompose these interactions, we conducted simple slope analyses 1 *SD* above and below the mean in change goals. As seen in Figure 1, people who were fine as-is and desired little change in disinhibition (z = 1; original scale score = 0.15) were predicted to increase .03 *SD*s each month (95% CI [.02, .05]). In contrast, participants with goals to decrease disinhibition (z = -1; original scale score = -0.99) tended to remain relatively constant in the trait (b = -.01, 95% CI [-.03, .01]). For negative affectivity

(see Figure 2), participants who were fine as-is and desired little change (z = 1; original scale score = -0.23) were predicted to increase .04 *SD*s in the trait each month (95% CI [.02, .06]). In contrast, participants with goals to decrease their negative affectivity (z = -1; original scale score = -1.31) were predicted to decrease .04 *SD*s each month (95% CI [-.06, -.02]). No other interactions emerged for the remaining traits (all|b|s < .003 95% CI [-.01, .01]).

Are These Findings Attributable to the Big Five Personality Traits?. Thus far, our findings indicate those who wished to decrease in negative affectivity and disinhibition reported doing so—*relative to their peers who did not wish to change*. However, one potential confound is that the pathological traits overlap with the Big Five (e.g., Suzuki et al., 2015;





Figure 1. Growth Model for Disinhibition.

Note. This figure depicts the interaction for change goals predicting growth in disinhibition. The solid line represents those 1 SD above the mean in change goals (z = 1; original scale score = 0.15), whereas the dotted line represents those 1 SD below the mean in change goals (z = -1; original scale score = -0.99). These values correspond to those who are fine as-is (i.e., desire almost no change) and those with goals to decrease their levels of disinhibition, respectively.





Note. This figure depicts the interaction for change goals predicting growth in negative affectivity. The solid line represents those 1 SD above the mean in change goals (z = 1; original scale score = -0.23), whereas the dotted line represents those 1 SD below the mean in change goals (z = -1; original scale score = -1.31). These values correspond to those who are fine as-is (i.e., desire almost no change) and those with goals to decrease their levels of negative affectivity, respectively.

Thomas et al., 2013). Thus, for instance, participants' growth in *conscientiousness* and desires to change the trait could explain the effects observed for disinhibition (i.e., desires to increase conscientiousness may produce increases in conscientiousness *alongside* decreases in disinhibition). Indeed, in our study, moderate correlations were found between each

		Outcomes													
	Det			А			Dis			Ν			Р		
		95% CI			95% CI			95% CI		95% CI			95% CI		
Predictors	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB
Intercept	02	-0.09	0.06	06	-0.13	0.02	.05	-0.02	0.11	0I	-0.07	0.04	.22	0.14	0.30
Month	.02	0.00	0.03	.05	0.04	0.07	.01	-0.01	0.02	.02	0.00	0.03	09	-0.09	-0.07
Change Goal	13	-0.20	-0.05	.06	-0.02	0.13	24	-0.30	-0.18	28	-0.34	-0.22	18	-0.26	-0.10
Month $ imes$ Change Goal	.00	-0.01	0.01	.00	-0.02	0.01	.02	0.01	0.03	.03	0.02	0.04	.00	-0.0 I	0.01
BFI–2 Trait	3 I	-0.34	-0.28	27	-0.30	-0.24	36	-0.39	-0.33	43	-0.46	-0.40	03	-0.06	-0.00

Table 3. Growth in Pathological Traits as a Function of Time and Change Goals (BFI-2 Controlled).

Note. MLMs for each pathological trait included the corresponding BFI-2 trait as a control. Extraversion was controlled for when assessing detachment, agreeableness for antagonism, conscientiousness for disinhibition, neuroticism for negative affectivity, and openness for psychoticism. The 95% Cls for parameter estimates in **boldface** do not include zero. Det = Detachment; A = Antagonism; Dis = Disinhibition; N = Negative Affectivity; p = Psychoticism; Cl = Confidence Interval; LB = Lower Bound; UB = Upper Bound.

pathological trait and the respective normative trait. However, consistent with prior research, the correlations were modest and thus suggest the pathological traits and Big Five traits are discriminant (average r = -.44, 95% CI [-.51, -.36]; see Table 1). Nonetheless, to rule out the possibility that our results might be explained by the Big Five, we reran our analyses controlling the Big Five. In these analyses, our interactions remained statistically significant (see Table 3), indicating that the observed effects are distinct from (i.e., not attributable to) the Big Five. Thus, participants' desires to change their pathological traits predicted corresponding changes in negative affectivity and disinhibition, above and beyond the Big Five.

Associations With Relevant Outcomes

For our final series of analyses, we examined the extent to which changes in each of the pathological traits predicted changes in relevant outcomes (e.g., well-being).

Wave I Correlations. First, we examined correlations between pathological traits and relevant outcomes at Wave 1 (see Table 4). Detachment was negatively correlated with life satisfaction (r = -.41, 95% CI [-.48, -.33]) and relationship satisfaction (r = -.18, 95% CI [-.32, -.03])—but positively associated with attachment avoidance (r = .47, 95% CI [.39, .54]). Antagonism was positively associated with both attachment anxiety (r = .11, 95% CI [.02, .21]) and avoidance (r = .20, 95% CI [.11, .29]). Disinhibition was negatively correlated with life satisfaction (r = -.23, 95% CI [-.31, -.14]) and relationship satisfaction (r = -.22, 95% CI [-.36, -.07]) but positively associated with attachment anxiety (r = .18, 95% CI [.08, .27]) and avoidance (r = .21, 95%CI [.11, .30]). Negative affectivity was negatively correlated with life satisfaction (r = -.26, 95% CI [-.34, -.17]), and positively correlated with attachment anxiety (r = .45, 95%CI [.37, .52]). Finally, psychoticism was negatively correlated with life satisfaction (r = -.20, 95% CI [-.29, -.11]),

and positively correlated with both attachment anxiety (r = .24, 95% CI [.15, .33]) and avoidance (r = .16, 95% CI [.06, .26]). Thus, each trait was associated with social-dysfunction to some extent. Specifically, all traits were associated with greater attachment insecurity, whereas only detachment and disinhibition were associated with lower relationship satisfaction. Finally, all traits except for antagonism were associated with lower well-being.

In the same vein, statistically significantly negative correlations were found for all pathological traits and life-functioning domains (see Table S3 in the Supplemental Materials; https:// osf.io/8mjqs/). Therefore, we created a life-functioning composite score across all domains (Wave 1 $\alpha = .89$). Indeed, a factor analysis revealed that all life-functioning variables loaded onto a single factor ($\lambda s \ge .63$). All five pathological traits were negatively correlated with general life-functioning (see Table 4).

Within-Person Correlations. Our final analyses examined how trait *changes* for negative affectivity and disinhibition correlated with *concurrent changes* in relevant outcomes. Specifically, we conducted a series of within-person correlations between changes in negative affectivity and disinhibition and several outcomes: life satisfaction, relationship satisfaction, life-functioning, and attachment styles. Within-person correlations were conducted by regressing each outcome onto each person's average trait level (i.e., between-persons correlation), their deviations around their personal mean at each wave (i.e., within-persons correlations), and a random intercept for participants. Full analyses for the remaining pathological traits can be found in the Supplemental Materials (see Tables S4–S7; https://osf.io/8mjqs/).

Within-person changes in negative affectivity and disinhibition were correlated with simultaneous changes in relationship and life satisfaction, attachment, and life-functioning (see Table 5). Specifically, decreases in disinhibition and negative affectivity were associated with concurrent increases in life satisfaction (b = -.05, 95% CI [-.08, -.02] and b = -.09, 95% CI [-.12,

					Correlatio	ns					
			I	2	3	4	5	6	7	8	9
Traits											
I. Detachment	2.30	.70	_								
2. Antagonism	2.26	.63	.15								
3. Disinhibition	2.32	.79	.23	.38							
4. Negative A.	3.02	.78	.20	.13	22	_					
5. Psychoticism	2.88	.78	.35	.18	.46	.40	_				
Outcomes											
6. LF	4.17	.52	43	15	34	38	39	_			
7. LS	3.28	.80	41	08	23	26	20	.45			
8. RS	3.88	.86	18	06	22	.004	04	.11	21	_	
9. A. Anxiety	3.11	.73	.06	.11	.18	.45	.24	3 I	24	29	_
10. A. Avoidance	2.48	.73	.47	.20	.21	.003	.16	17	22	53	.06

	Table 4. Wave	I Correlations Between Pathological Personality	Traits and Outcomes.
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Note. The 95% CIs for parameter estimates in **boldface** do not include zero. Negative A. = Negative Affectivity; LF = Life functioning; LS = Life satisfaction; RS = Relationship Satisfaction; A. Anxiety/Avoidance = Attachment Anxiety/Avoidance.

 Table 5.
 Within-Person Correlations Between Pathological Traits and Satisfaction Outcomes.

							Οι	itcomes							
	RS 95% Cl		RS LS				Anx			Avd			LF		
				95% CI		95% CI			95% CI						
Predictors	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB	Ь	LB	UB
Intercept DIS _B	17 30	-0.30 -0.43	-0.05 -0.17	–.02 –.27	-0.11 -0.36	0.06 0.18	00 .27	-0.08 0.18	0.08 0.36	.02 .33	-0.06 0.24	0.11 0.42	–.05 –.40	-0.12 -0.49	0.03 0.32
DISw	0I	-0.12	0.11	05	-0.08	-0.02	.13	0.07	0.19	.10	0.05	0.15	17	-0.22	-0.12
Intercept NEG _B NEG _W	20 13 09	-0.33 -0.28 -0.19	-0.07 0.02 0.02	–.05 –.28 –.09	-0.14 -0.37 -0.12	0.03 0.19 0.06	.02 .57 .24	-0.05 0.49 0.19	0.09 0.65 0.30	.05 .10 .06	-0.04 0.00 0.01	0.14 0.20 0.11	09 41 15	-0.16 -0.50 -0.20	-0.01 -0.33 -0.10

Note. The 95% Cls for parameter estimates in **boldface** do not include zero. DIS_{B} indicates between-persons effect for disinhibition, and DIS_{W} indicates within-persons effect for disinhibition. NEG_{B} and NEG_{W} are between and within-persons effects for negative affectivity, respectively. RS = Relationship Satisfaction; LS = Life Satisfaction; Anx = Anxious Attachment; Avd = Avoidant Attachment; LF = Life functioning.

-.06], respectively) across time—but not relationship satisfaction. Moreover, decreases in disinhibition and negative affectivity were correlated with decreases in attachment anxiety (b =.13, 95% CI [.07, .19]; b = .24, 95% CI [.19, .30], respectively) and attachment avoidance (b = .10, 95% CI [.05, .15]; b = .06, 95% CI [.01, .11], respectively) across time. Finally, decreases in disinhibition and negative affectivity predicted increases in life-functioning (b = -.17, 95% CI [-.22, -.12]; b = -.15, 95% CI [-.20, -.10]). Thus, results indicated that decreases in pathological traits were associated with decreases in attachment insecurity and increases in life-functioning and well-being.

Discussion

Previous research suggests that people with lower levels of the Big Five traits want to increase each trait—and tend to change in ways that align with their desires (e.g., Hudson, Fraley, et al., 2020). However, very little research has examined volitional change in pathological personality. The present study examined change in the five-factor model of pathological personality over an approximately 4-month timespan among a sample of college students. We explored (a) whether participants desired to change pathological personality traits, (b) the extent to which change goals predicted corresponding trait change, (c) the extent to which this change was discriminant from the Big Five, and (d) the extent to which changes in pathological personality predicted changes in relevant outcomes.

Desires for Pathological Trait Change

Replicating prior research (J. D. Miller et al., 2018; Sleep et al., 2019, 2022), the average participant in our sample wanted to decrease each pathological trait—and these desires were greatest for negative affectivity and disinhibition. These findings dovetail with research indicating that people most want to increase Big Five emotional stability (the reverse analog of negative affectivity) and conscientiousness (the reverse analog of disinhibition; Baranski et al., 2017; Hudson & Fraley, 2016b; Hudson & Roberts, 2014; Thielmann & de Vries, 2021). Taken together, the literature collectively indicates that people want to increase in desirable traits (e.g., the Big Five) and decrease in undesirable and/or maladaptive ones (e.g., the five pathological traits).

Why Do People Want to Change Their Traits? Previous research has found that people most want to increase in positively-framed Big Five personality traits if they possess low levels of the respective trait (Baranski et al., 2017; Hudson & Fraley, 2015, 2016b; Hudson & Roberts, 2014). Mirroring these findings, participants in our study particularly wanted to decrease the pathological traits of negative affectivity, disinhibition, detachment, or psychoticism if they were high in the respective trait (but this was not found for antagonism). Although we did not explore mechanisms linking high levels of pathological traits to more intense desires to decrease the respective traits, the existing literature offers some insight into why this association may occur. First, people report intrinsically disliking high levels of each pathological trait, and thus may be motivated to change to possess more socially desirable qualities per se (Lamkin et al., 2018; J. D. Miller et al., 2018). Beyond intrinsic motives, pathological traits are-by nature-impairing to the individual and their relationships (e.g., Sleep et al., 2019; Wright et al., 2012, 2015). Thus, people may be extrinsically motivated to reduce pathological traits to ameliorate problems in their lives (e.g., improve functioning in interpersonal relationships; Hudson & Roberts, 2014; Thielmann & de Vries, 2021).

That said, contrasting with the other four pathological traits, antagonism was not associated with goals to decrease the trait. This replicates previous findings that only weak associations exist between antagonism and desires to change antagonism (Sleep et al., 2022). This lack of association may be attributable to several factors. For one, highly antagonistic individuals view their personality as equally impairing and beneficial (J. D. Miller et al., 2018)-and people view antagonism as one of the least impairing pathological traits. Beyond this, associations between normative Big Five traits and change goals are typically weakest for agreeableness and openness (Thielmann & de Vries, 2021). Indeed, agreeableness is predominantly a morally-relevant trait (e.g., it involves treating others with kindness, love, and respect)-and research suggests that people are less motivated to change moral traits (i.e., ones that benefit others) as opposed to ones that benefit the self (e.g., Sun & Goodwin, 2020). In turn, our findings may suggest that people with greater levels of antagonism accept their current levels of the trait, overlook potential interpersonal impairments, and consequently express little desire for change (e.g., Lamkin et al., 2018).

Pathological Trait Change

Mean-Level Change. The average participant in our sample experienced increases in self-reported detachment and antagonism-but decreases in psychoticism. These findings seem to conflict with existing research. For instance, broad pathological trait change has not been reported in the five-factor pathology model (Wright et al., 2015). Moreover, our findings seem to run counter to meta-analyses on normative trait development, which suggest that emerging adults generally become more extraverted and agreeable over time (e.g., Roberts et al., 2006). That said, it is common for short-term studies to contradict broad, meta-analytic trends. For example, one mega-analysis of 12 semester-long studies with more than 2,000 total participants found no mean-level changes in agreeableness and *decreases* in consciousness across time (Hudson, Fraley, et al., 2020). Variance in estimates of mean-level growth from study-to-study can be attributed to sampling error-and it is also possible that testing effects (e.g., initially reporting favorable traits and becoming more honest over time) or history effects may play a role (e.g., students' levels of agreeableness or conscientiousness may drop across the semester as a function of their waning enthusiasm for their studies and/or campus life).

To the extent that the mean-level increases in antagonism in our study are not due to sampling error or testing/history effects, prior research shows that some individuals want to increase their antagonistic traits because they view such traits as advantageous (Hart et al., 2022; Sleep et al., 2022). Thus, increases in antagonism in the present study may reflect students' engagement in behaviors that affirm antagonism's utilitarian value (Hart et al., 2022). With respect to mean-level increases in detachment, college students often experience a multitude of daily stressors and social anxieties stemming from becoming independent adults (e.g., moving away from family), which can result in increased detachment (e.g., Taylor et al., 2020).

Change Goals Predicting Trait Change. In our sample, participants' goals to change negative affectivity and disinhibition predicted subsequent, corresponding trait change. Specifically, students who reported little-to-no desires to change tended to increase in negative affectivity and disinhibition over time. In contrast, participants who desired decreases in negative affectivity and disinhibition counteracted these trends. For negative affectivity, participants who wanted to decrease experienced absolute decreases in the self-reported trait, whereas participants who wanted to decrease in disinhibition remained relatively stable across time. With respect to disinhibition, it is important to note that *rank-order change* is independent of *mean-level change* (Clancy et al., 2003; Roberts & DelVecchio, 2000). Thus, by remaining constant in disinhibition, people who wanted to change were decreasing *relative to their peers who did not want to change* (as their peers were increasing in the trait, due to unidentified factors). In sum, participants changed in ways that aligned with their desires with respect to negative affectivity and disinhibition. These findings reinforce prior research that suggests that people might be intuitively aware of how to change their personality and make active changes to achieve desired traits (Quinlan et al., 2006; Stevenson & Clegg, 2011).

Nevertheless, the effects observed in our study were relatively modest. The difference in cumulative growth across the 4-month study between someone who was fine as-is (1 *SD* above the mean in change goals) and an individual who expressed moderate desires to change (1 *SD* below the mean in change goals) was .32 *SDs* for negative affectivity and .16 *SDs* for disinhibition. Although these effects may seem small, meta-analyses suggest that normative traits change about a maximum of 1 *SD across the entire adult lifespan* (Roberts et al., 2006). Thus, changes of up to .32 *SDs* across four months represent substantial change. Moreover, personality traits predict a variety of life outcomes; thus, small changes in personality may be consequential (Ozer & Benet-Martínez, 2006; Roberts et al., 2006, 2007).

Our findings of volitional change in pathological traits align nicely with previous research on the Big Five personality traits (Hudson, Fraley, et al., 2020). Namely, a mega-analysis of a dozen studies with a combined total of more than 2,000 participants found that change goals most strongly predict growth in emotional stability (the normative analog of negative emotionality), conscientiousness (the analog of disinhibition), and extraversion (the analog of detachment) and change goals were relatively weakly related to growth in agreeableness (the analog of antagonism) and openness (the analog of psychoticism; Hudson, Fraley, et al., 2020). Indeed, studies with relatively smaller sample sizes (i.e., less than thousands)-such as ours-frequently fail to find that change goals predict growth in agreeableness or openness (e.g., Hudson & Fraley, 2016a). Thus, it is likely that our study was underpowered to detect effects for antagonism and psychoticism (and potentially detachment)-and that it was able to detect effects for disinhibition and negative affectivity due to their larger effect sizes.

To the extent that the lack of findings in our study are not due to low statistical power and sampling error, the null findings for detachment, antagonism, and psychoticism could reflect at least two distinct processes. First, participants may not be actively working on changing traits such as antagonism and psychoticism (and potentially detachment). As an analog, in intervention studies where participants are offered a choice of which Big Five traits for which they would like to receive an intervention, very few participants select agreeableness or openness—instead favoring extraversion, conscientiousness, and emotional stability (Hudson et al., 2018; Stieger et al., 2021). Similarly, when asked which traits they would like to change in an open-ended fashion, people rarely list qualities related to agreeableness or openness (T. J. Miller et al., 2019). Thus, participants-even those who assent to the idea that they would like to be less antagonistic or psychotic when directly asked (e.g., via structured questionnaire)-may not have goals related to antagonism or psychoticism salient in their everyday lives, and therefore may not implement strategies to change these traits (e.g., Quinlan et al., 2006). Given that the pathological five are not straight-equivalents of the Big Five, similar logic may apply to detachment: even though people with low extraversion can reason about how to behave in a more extraverted fashion, those with high levels of detachment may be unable to do so, given the severe and impairing nature of detachment. As a second and related process, the impairing nature of antagonism, detachment, and psychoticism may prevent people from generating viable strategies to change the traits (e.g., because they are unsure how to change the trait) or from implementing strategies (e.g., because they lack the skills necessary to successfully change their behavior over long periods of time; Hopwood, 2018; Mullins-Sweatt et al., 2020).

Pathological Trait Change and Relevant Outcomes

Finally, consistent with previous research (e.g., Wright et al., 2015), all five pathological traits were negatively associated between-persons with general life functioning, and all traits except antagonism were negatively associated with wellbeing. Specifically examining change, within-person decreases in negative affectivity and disinhibition predicted increases in well-being and life-functioning. Likewise, changes in detachment and disinhibition were negatively associated with changes in relationship satisfaction. Finally, changes in all pathological traits except detachment were positively associated with concurrent changes in attachment anxiety. This suggests that pathological traits negatively impact people and their relationships, which often makes it difficult to maintain long-term and satisfying relationships (e.g., J. D. Miller et al., 2018; Wright et al., 2012, 2015).

Collectively, the findings from our study suggest that people want to change their pathological traits. Moreover, our study suggests that people may be able to change negative affectivity and disinhibition—which may have downstream consequences for important outcomes such as life functioning, well-being, and relationship security.

Limitations and Future Directions

Several limitations of our study deserve consideration. First, our study utilized a subclinical sample of predominantly white college students. Although this enhances our understanding of pathological trait change along the entire spectrum in nonclinical populations, our study cannot comment on those with clinically significant levels of pathology.⁴ To this end, research suggests clinically elevated pathological traits respond to clinical treatments (e.g., therapy and/or medication; Ingenhoven et al., 2010; Kool et al., 2003; Vaslamatzis et al., 2014). In addition, the *DSM-5* notes that some personality disorders lessen in severity with age, suggesting that even clinical samples may be capable of change (APA, 2013). Nevertheless, our study cannot comment on whether volitional change processes may differ for those with bona fide personality disorders—who may face greater difficulties in changing their own traits. Future research might explore whether our findings generalize to clinical samples.

Similarly, personality development processes may differ across the lifespan (Roberts et al., 2006). For example, Big Five traits such as conscientiousness and emotional stability change most among young adults (Roberts et al., 2006). Thus, it is possible that pathological traits also change differently across the lifespan. Although there is evidence that volitional change processes function similarly among older (than college-aged) adults in the context of the Big Five (Stieger et al., 2021), future research should examine the generalizability of our findings with pathological traits to other age groups. In this same vein, other demographics (e.g., culture, race, ethnicity) may influence personality development (Arshad & Chung, 2022). Given that our sample was predominantly white and female, future research should collect data from more diverse samples.

Second, most participants did not complete all 16 waves of our study—and attrition was non-random (i.e., conscientious individuals were likely to complete more waves). Although non-random attrition does not create illusory change, it does potentially limit the generalizability of our findings. For example, our findings may mostly generalize to conscientious students. Therefore, future research should attempt to minimize attrition.

Third, our study was relatively short in duration (16 weeks). In turn, it is unknown whether the trait changes in our sample can be maintained over extended periods of time. Namely, participants might revert to their baseline traits after some time (e.g., Robinson et al., 2015). In contrast, volitional change may persist over time (Roberts et al., 2017; Stieger et al., 2021). Thus, future research should aim to assess volitional change over a greater timespan.

Fourth, participants completed self-report measures of their personality and other variables. Although some research suggests that people can accurately self-report their pathological traits (Lamkin et al., 2018; J. D. Miller et al., 2018; Sleep et al., 2019, 2022), other studies have found that individuals with greater pathological traits are less accurate in reporting their traits and relevant interpersonal impairment (Carlson & Oltmanns, 2015; Carnovale et al., 2019). In addition, when self- and informant-reports of the Big Five are

used as predictors of personality disorders, self-reports are generally more valid for internalizing traits (e.g., high neuroticism), whereas informant-reports are more valid for externalizing (e.g., low agreeableness, conscientiousness; Carlson et al., 2013). Therefore, future research should corroborate our findings with other measures of personality (e.g., informant-reports or clinical interviews; Paulhus & Vazire, 2007).

Fifth, although the short form of the PID-5 provides a quick assessment of pathological traits, research may benefit from assessing change in pathological traits at the facet level. For instance, Wright et al. (2015) found personality change only at the facet level. Thus, using the full or brief scale versions of the PID-5 may be more informative (Krueger et al., 2012; Maples et al., 2015).

Finally, given that desires to change some pathological traits may influence actual trait change, research should examine the effects of behavioral interventions. For example, research suggests that making detailed plans to change one's behavior can lead to changes in the normative Big Five traits (Hudson et al., 2019; Hudson & Fraley, 2015; Stieger et al., 2021). Moreover, Big Five interventions have been shown to have "collateral" effects on related traits, such as the Dark Triad (Hudson, 2023). Thus, nonclinical interventions may similarly be able to target pathological personality traits. This may have important implications for those with elevated pathological traits—given that personality disorders are noted for their difficulty to treat (Bateman et al., 2015). Future research should explore nonclinical interventions' efficacy on pathological traits—both among general samples and clinical ones.

Conclusion

Our study suggests that emerging adults want to reduce their pathological personality traits. More excitingly, they may be capable of doing so—at least with respect to negative affectivity and disinhibition. However, these findings also suggest that some traits may be more resistant to change—namely antagonism. Nevertheless, future research should continue to examine pathological personality change—both in general and in the context of volitional change efforts.

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Supplemental Material

Supplemental material is available online with this article.

Notes

- 1. In the personality literature, "growth" is a somewhat generic term that can refer to both positive and negative trajectories of variables across time.
- 2. This is the power analysis for a correlation of r = .21, given our sample size.
- 3. Time was scaled as Months (i.e., operationalized as the number of days since Wave 1 divided by 30). We centered Time on Wave 1, so that Month = 0 at Wave 1. Given that participants were afforded flexibility in when they completed each wave, scaling time to months allowed us to account for time differences between waves among individual participants in our sample.
- 4. There is no agreed-upon clinical cutoff guidelines for the PID-5 in determining clinically elevated scores. Thus, we cannot provide an estimate of what percentage our sample reported clinically significant pathology. Ultimately, however, our goal was to examine variation across the entire spectrum for each trait.

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