Before and after: Personality pathology, childhood conditions, and life history outcomes

CrossMark

Peter K. Jonason [a,*], Virgil Zeigler-Hill [b], Jake Baldacchino [a]

[a] Western Sydney University, Australia
[b] Oakland University, United States

ARTICLE INFO

ABSTRACT

In this study ($N = 253$), we examined how pathological personality traits are related to (self-reported) childhood conditions and the adult life outcomes of rates of education, socioeconomic status, income, and number of offspring for men and women. We found (1) childhood unpredictability was more strongly associated with pathological personality traits than was harshness; (2) higher levels of psychoticism were associated with a broad-spectrum of adverse life history outcomes; (3) men reported higher levels of detachment, antagonism, disinhibition, and psychoticism than women reported; and (4) moderated-mediational analyses suggested detachment and antagonism differentially mediated the associations between childhood socioecological conditions and adult life outcomes for men and women.

© 2017 Elsevier Ltd. All rights reserved.

Most research on personality disorders relies on criminal/clinical samples and clinically-based diagnostic tools making it limited in generalizability and based on categorical as opposed to continuous thinking. That is, by relying on clinical samples, researchers might be undermining their ability to make broader claims about *darker* aspects of personality, and by focusing on yes/no diagnoses, researchers may be making conceptual errors in that few things in human psychology are dichotomous. In addition, the latter limitation may perpetuate us-vs-them thinking in the public when talking about personality disorders. Recently, a new measure (i.e., *Personality Inventory for the DSM-5*; Krueger, Derringer, Markon, Watson, & Skodol, 2012) has been developed to capture the continuous nature of "maladaptive" traits like *negative affectivity* (i.e., the tendency to experience an array of negative emotions), *detachment* (i.e., characterized by introversion, social isolation, and anhedonia), *antagonism* (i.e., aggressive tendencies accompanied by assertions of dominance and grandiosity), *disinhibition* (i.e., impulsivity and sensation seeking), and *psychoticism* (i.e., a disconnection from reality and a tendency to experience illogical thought patterns). The traits captured by this model are socially undesirable variants (Chmielewski, Bagby, Markon, Ring, & Ryder, 2014; Few et al., 2013) of the Big Five personality dimensions of emotional stability (i.e., negative affectivity), extraversion (i.e., detachment), agreeableness (i.e., antagonism), conscientiousness (i.e., disinhibition), and openness (i.e., psychoticism) and predict interpersonal and intrapersonal dysfunctions (Pollock, McCabe, Southard, & Zeigler-Hill, 2016; Southard,

Noser, Pollock, Mercer, & Zeigler-Hill, 2015). Research concerning these traits is still in its infancy. Here we add to that discussion by examining the role of (self-reported) childhood conditions in accounting for variance in these traits and the life outcomes associated with these traits.

There is little doubt that early life experiences (i.e., the before) shape adult personality and interpersonal functioning (Bowlby, 1979) with adverse childhood conditions sending people on a (dark) path towards personality pathologies (Bjorklund, 2015; Volk & Atkinson, 2013). However, not all adverse conditions are the same, with two main sources of volatility in the shape of predictability and the availability of resources or harshness (Brumbach, Figueredo, & Ellis, 2009). The unpredictability of one's childhood environment may influence the development of predictive heuristics that guide decision-making in the future (Hurst & Kavanagh, 2017) like those seen in traits like psychopathy and narcissism (Jonason, Icho, & Ireland, 2016) whereas the harshness may affect the development of psychopathologies and neurological disorders (Moreria, 2003). We contend that traits like disinhibition and interpersonal antagonism are not really psychopathologies, but, instead, represent cognitive adaptations calibrated by childhood conditions that happen to have socially undesirable outcomes linked to them. As a result, we expect that both harshness and unpredictability will be positively correlated with the PID traits (H1a) and we expect unpredictability to be more important (H1b).

In addition, as socially undesirable variants of the Big Five traits, they should be related to undesirable *sequelea* (i.e., the after). In particular, there are likely to be a number of associations between these personality traits and life outcomes. First, detachment may undermine one's ability to successfully navigate one's life given the centrality of social

---

* Corresponding author at: School of Social Sciences and Psychology, Western Sydney University, Penrith, NSW 2751, Australia.
E-mail address: p.jonason@westernsydney.edu.au (P.K. Jonason).

interactions to both of these life outcomes (H2a). Second, negative affectivity may have a suppressive effect on the financial success that is attainable in adulthood just as neuroticism undermines work-related success (H2b; Hurtz & Donovan, 2000). Third, disinhibition may undermine educational success because impulsivity may reduce the likelihood that individuals will finish school and increase the probability that they will make other choices characterized as *fast* life choices such as using drugs and alcohol, prioritizing immediate rewards over delayed ones, and engaging in selfish behaviors (H2c; White, Jarrett, & Ollendick, 2013). Fourth, and perhaps more sweepingly, psychoticism – with its delusional and quasi-schizophrenic nature – may fundamentally undermine one's ability to be successful in education, reproduction, and finances (H2d). Individuals with high levels of psychoticism may view the world so differently than others that it may make them unattractive to potential romantic partners, lead to conflict with educational institutions, and result in difficulties maintaining conventional forms of employment.

And last, we conjecture about potential sex differences in the personality reactions to childhood stressors. First, the scarcity of resources in one's childhood may encourage men to distance themselves from their social and family group. Doing so may allow men to go out and find the resources they need, unfettered by emotional and familial attachments. In contrast, the survival risks of venturing out like this may continue to be too high for women and the role of affective bonds too central to make such a response to scarcity a viable option. Second, the reasons for the development of antagonism – as well as the consequences of antagonism – may be different between the sexes. For instance, aggression and competiveness may be adaptive responses in men (Sell, Tooby, & Cosmides, 2009) that result from the experience of unpredictable childhoods and may pay off in terms of adult outcomes such as status. That is, men may be sensitive to unpredictability which helps them achieve important, male-specific life outcomes through the development of antagonistic social strategies (Hurst & Kavanagh, 2017; Jonason et al., 2016), whereas men may be relatively insensitive to resource scarcity during childhood. In contrast, given the relatively high rates of resources that are demanded from women by offspring, women who are sensitive and responsive to this information might have better survival rates than those who are indifferent to these resource demands. As resources in the environment improve, women may become more competitive (i.e., antagonistic) in hopes of acquiring even more resources for their offspring. Alternatively, childhood abundance may provide women the safety needed to offset the potential dangers associated with engaging in an antagonistic social strategy. That is, instead of being activated by childhood abundance, this condition may simply set the stage for women who are latently antagonistic to express that part of their nature.

1. Method

1.1. Participants and procedure

Participants were 253 community adults from the United States (40% male) who were recruited using Amazon's Mechanical Turk and paid US$2 in exchange for completing the below measures – along with other measures that are not relevant to the present study – via a secure website. The mean age of our participants was 37.08 years (SD = 11.52, $Range$ = 18–80).[1] The majority of the sample was European American (72%), followed by African American (8%), Hispanic (5%), Asian (5%), and "other" (6%).

1.2. Measures

We assessed childhood conditions with a self-report, retrospective measure (Griskevicius, Delton, Robertson, & Tybur, 2011). Participants completed the measures of family resources (8 items; e.g., "Familial support for food" [Cronbach's α = 0.91]) and childhood unpredictability under ten years of age (3 items; e.g., "Things were often chaotic in my house" [α = 0.77]). Items were averaged to create indexes of each.

We used brief form of the PID-5 (Krueger et al., 2012) which is composed of 25 items that assess *negative affectivity* (5 items; e.g., "I worry about almost everything" [α = 0.78]), *detachment* (5 items; e.g., "I don't like to get too close to people" [α = 0.80]), *antagonism* (5 items; e.g., "I use people to get what I want" [α = 0.79]), *disinhibition* (5 items; e.g., "People would describe me as reckless" [α = 0.83]), and *psychoticism* (5 items; e.g., "My thoughts often don't make sense to others" [α = 0.82]). Participants were asked to rate how accurately (0 = *very false or often very false*; 3 = *very true or often true*) each of the items described them. Items were averaged to create indexes of each.

We assessed an assortment of potential life outcome data. We assessed number of offspring and found that our participants had, on average, one child (M = 1.01, SD = 1.20; $Range$ = 0–5). We assessed level of education: <1% of our participants did not complete high school, 10% completed high school, 26% completed some college, 12% had an Associate's degree, 29% had a Bachelor's degree, and 16% had a graduate degree.[2] We assessed current socioeconomic status by asking agreement (1 = *strongly disagree*; 7 = *strongly disagree*) with three self-report items (e.g., "I feel relatively wealthy these days"; α = 0.88; Griskevicius et al., 2011) and current household income on a scale that ranged from 1 (*Less than US$15,000*) to 8 (*More than US$150,000*).

2. Results

We found no sex differences in self-reports of childhood conditions, level of education, current SES, or current income. Women had slightly more negative affectivity than men did ($t[251]$ = 1.79, p < 0.08, Cohen's d = 0.23) and men were more detached ($t[251]$ = −3.05, p < 0.01, d = −0.38), antagonistic ($t[251]$ = −5.72, p < 0.01, d = −0.74), disinhibited ($t[251]$ = −3.46, p < 0.01, d = −0.45), and psychotic ($t[251]$ = −2.89, p < 0.01, d = −0.35) than women were.[3] In Table 1, we document the correlations between each of the pathological traits, their relationships with harshness and unpredictability (H1a), and how they are associated with life outcome data (H2a-d).[4] Generally, these effects were weak, but they suggest an array of deleterious outcomes associated with pathological personality traits, mostly detachment (H2a) and psychoticism (H2d). When we controlled for unpredictability, the correlations were all near zero and not significant. In contrast, when we controlled for harshness, unpredictability was still correlated with all of traits that we measured (prs = 0.17 to 0.24, ps < 0.01)[5] confirming our contention that predictability is the more important determinant of personality variance than harshness (H1b).

2.1. Moderated-mediation

We employed a moderated-mediation analysis (see Fig. 1) using model eight of the PROCESS macro developed by Hayes (2013) with 10,000 bootstrapped samples. Our hypotheses were consistent with an indirect effects model such that the association between childhood socioecological conditions (i.e., childhood unpredictability and childhood resource availability) and adult life outcomes (i.e., number of

---

Table 1
Correlations between childhood socioecological conditions, pathological personality traits, and adult life outcomes.

	1	2	3	4	5	6	7	8	9	10	11
1. Childhood unpredictability											
2. Childhood resource availability	-0.57^{**}										
3. Negative affectivity	0.25^{**}	-0.19^{**}									
4. Detachment	0.24^{**}	-0.20^{**}	0.48^{**}								
5. Antagonism	0.23^{**}	-0.08	0.38^{**}	0.40^{**}							
6. Disinhibition	0.26^{**}	-0.12	0.48^{**}	0.46^{**}	0.57^{**}						
7. Psychoticism	0.28^{**}	-0.20^{**}	0.59^{**}	0.54^{**}	0.55^{**}	0.64^{**}					
8. Number of offspring	-0.01	0.02	-0.06	-0.16^{**}	-0.10	-0.03	-0.17^{**}				
9. Level of education	-0.03	0.12	-0.09	-0.08	0.00	-0.16^{**}	-0.15^{*}	-0.05			
10. Current SES	0.00	0.15^{*}	-0.16^{**}	-0.21^{**}	0.02	-0.05	-0.19^{**}	0.05	0.23^{**}		
11. Current income ($US)	0.02	0.07	-0.12	-0.22^{**}	-0.01	-0.11	-0.15^{*}	0.18^{**}	0.33^{**}	0.54^{**}	

* $p < 0.05$.
** $p < 0.01$.
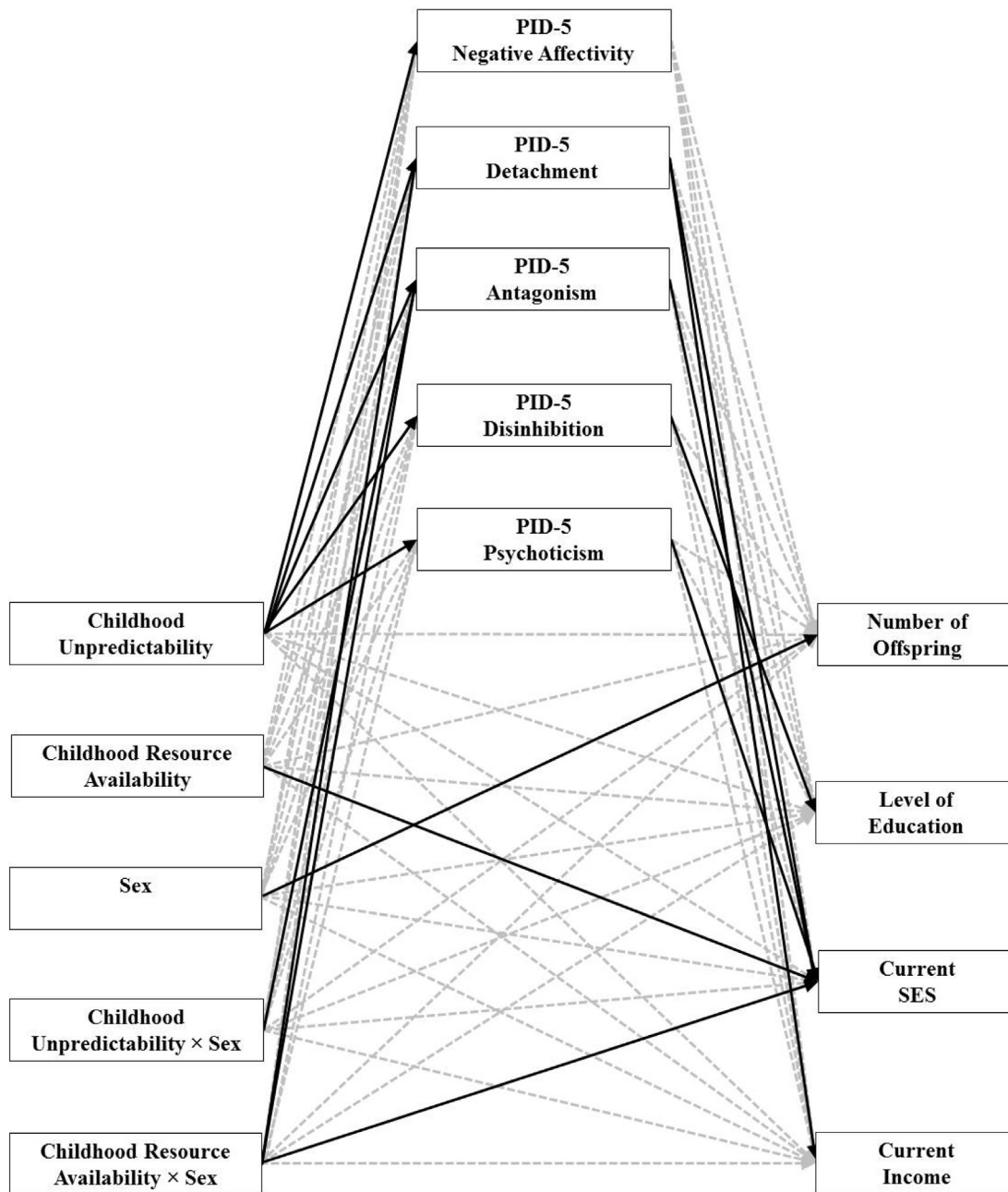
Fig. 1. The results of the moderated-mediation analysis with pathological personality traits mediating the association between childhood socioecological conditions and adult life outcomes. Note. The significant associations are indicated by solid black arrows and the non-significant associations are indicated by dashed grey arrows.

offspring, level of education, current SES, current income) was believed to be caused, at least in part, by the development of pathological personality traits. Indirect effects are considered to be significant if their confidence intervals do not contain zero. That is, confidence intervals that do not contain zero suggest significant mediation. This model included sex as a potential moderator in order to determine whether the strength of the indirect (i.e., mediation) effects would differ in accordance with the sex of the participant.

We found that sex moderated the associations that childhood resource availability had with detachment ($\beta = -0.10$, $p < 0.05$) and antagonism ($\beta = -0.11$, $p < 0.01$) as well as the association that childhood unpredictability had with antagonism ($\beta = 0.07$, $p < 0.01$). Simple slopes tests (Aiken & West, 1991) were conducted to probe the interactions that emerged from this analysis. These simple slopes tests were conducted using values that were one standard deviation above the means for childhood resource availability and childhood unpredictability to represent individuals who experienced high levels of these childhood socioecological conditions and one standard deviation below the means for childhood resource availability and childhood unpredictability to represent individuals who experienced low levels of these childhood socioecological conditions. The results of these analyses are reported in Table 2. The predicted values for detachment are presented in Panel A of Fig. 2. Simple slopes tests for the interaction of childhood resource availability × sex revealed a negative association between childhood resource availability and detachment for men ($\beta = -0.26$, $p < 0.05$) but not women ($\beta = 0.05$). This pattern is important because it suggests that scarce resources during early childhood are associated with the development of detachment in men but not women. A significant interaction between childhood resource availability and sex in predicting detachment suggests the possibility of moderated mediation for current income (Hayes, 2013). To examine the possibility of moderated mediation, we examined the indirect link of childhood resource availability with current income through detachment for men and women. The indirect link between childhood resource availability with current income through detachment was significant for men ($\beta = 0.10$, 95% CI [0.01, 0.27]) but not for women ($\beta = -0.01$, 95% CI [−0.11, 0.06]). These moderated indirect effects extend the previously described moderation of the relation between childhood resource availability and detachment (i.e., the link between the predictor and the mediator). More specifically, men who experienced less access to resources during childhood report higher levels of detachment which, in turn, was associated with lower levels of current income. In contrast, childhood resource availability was not associated with detachment for women nor does detachment mediate the association between childhood resource availability and current income for women.

The predicted values for antagonism illustrating the interaction of childhood resource availability × sex are presented in Panel B of Fig. 2. Simple slopes tests revealed a positive association between childhood resource availability and antagonism for women ($\beta = 0.21$, $p < 0.05$) but not men ($\beta = -0.06$). This pattern shows that men tend to report higher levels of antagonism regardless of childhood resource availability, whereas women are more likely to report higher levels of antagonism when they had greater access to resources during childhood. To examine the possibility of moderated mediation, we examined the indirect link of childhood resource availability with current SES through antagonism for men and women. The indirect link between childhood resource availability with current SES through antagonism was significant for women ($\beta = 0.09$, 95% CI [0.02, 0.23]) but not for men ($\beta = -0.05$, 95% CI [−0.19, 0.02]). These moderated indirect effects extend the previously described moderation of the relation between childhood resource availability and antagonism. More specifically, women who experienced greater access to resources during childhood report higher levels of antagonism which, in turn, was associated with higher levels of current SES. In contrast, childhood resource availability was not associated with antagonism for men nor did antagonism mediate the association between childhood resource availability and current SES for men.

Table 2
Results of the Moderated Mediation Analysis.

Predictor variable	β	t	CI_{Lower}-CI_{Upper}	R^2
Criterion: PID-5 negative affectivity				
Model summary				0.08**
Childhood unpredictability	0.09	2.70**	0.03,0.16	
Childhood resource availability	−0.05	−0.85	−0.15,0.06	
Sex	−0.05	−0.68	−0.21,0.10	
Childhood unpredictability × sex	−0.01	−0.27	−0.06,0.05	
Childhood resource availability × sex	−0.01	−0.11	−0.09,0.08	
Criterion: PID-5 detachment				
Model summary				0.10**
Childhood unpredictability	0.09	2.81**	0.03,0.17	
Childhood resource availability	−0.07	−1.28	−0.17,0.04	
Sex	0.10	1.27	−0.06,0.26	
Childhood unpredictability × sex	0.02	0.64	−0.04,0.08	
Childhood resource availability × sex	−0.10	−2.22*	−0.19,−0.01	
Criterion: PID-5 antagonism				
Model summary				0.22**
Childhood unpredictability	0.13	4.84**	0.08,0.19	
Childhood resource availability	0.04	0.88	−0.05,0.12	
Sex	0.07	1.13	−0.05,0.20	
Childhood unpredictability × sex	0.07	2.97**	0.02,0.11	
Childhood resource availability × sex	−0.11	−2.97**	−0.18,−0.04	
Criterion: PID-5 disinhibition				
Model summary				0.14**
Childhood unpredictability	0.14	4.52**	0.08,0.20	
Childhood resource availability	0.03	0.60	−0.07,0.12	
Sex	0.07	0.96	−0.07,0.21	
Childhood unpredictability × sex	0.04	1.45	−0.01,0.09	
Childhood resource availability × sex	−0.05	−1.19	−0.13,0.03	
Criterion: PID-5 psychoticism				
Model summary				0.14**
Childhood unpredictability	0.12	3.61**	0.05,0.18	
Childhood resource availability	−0.05	−0.93	−0.15,0.05	
Sex	0.08	1.07	−0.07,0.23	
Childhood unpredictability × sex	0.02	0.86	−0.03,0.08	
Childhood Resource availability × sex	−0.04	−0.87	−0.12,0.05	
Criterion: number of offspring				
Model summary				0.09**
Childhood unpredictability	0.01	0.18	−0.11,0.13	
Childhood resource availability	−0.04	−0.42	−0.22,0.14	
Sex	−0.39	−2.79**	−0.66,-0.11	
Childhood unpredictability × sex	0.08	1.56	−0.02,0.18	
Childhood resource availability × sex	−0.12	−1.45	−0.27,0.04	
PID-5 negative affectivity	0.03	0.19	−0.26,0.31	
PID-5 detachment	−0.19	−1.44	−0.44,0.07	
PID-5 antagonism	−0.02	−0.12	−0.35,0.31	
PID-5 disinhibition	0.31	1.92	0.00,0.63	
PID-5 psychoticism	−0.35	−2.10	−0.68,−0.02	
Criterion: level of education				
Model summary				0.06
Childhood unpredictability	0.10	1.38	−0.04,0.23	
Childhood resource availability	0.20	1.92	−0.01,0.40	
Sex	−0.06	−0.35	−0.36,0.25	
Childhood unpredictability × sex	0.04	0.64	−0.08,0.15	
Childhood resource availability × sex	−0.01	−0.01	−0.18,0.18	
PID-5 negative affectivity	0.04	0.24	−0.28,0.36	
PID-5 detachment	0.03	0.18	−0.26,0.31	
PID-5 antagonism	0.31	1.64	−0.06,0.67	
PID-5 disinhibition	−0.41	−2.27*	−0.77,−0.05	
PID-5 psychoticism	−0.24	−1.27	−0.60,0.13	
Criterion: current SES				
Model summary				0.11**
Childhood unpredictability	0.15	1.65	−0.03,0.33	
Childhood resource availability	0.30	2.21*	0.03,0.58	
Sex	−0.04	−0.21	−0.45,0.36	
Childhood unpredictability × sex	−0.03	−0.39	−0.18,0.12	
Childhood resource availability × sex	0.29	2.48*	0.06,0.52	
PID-5 negative affectivity	−0.23	−1.09	−0.66,0.19	

Table 2 (continued)

Predictor variable	β	t	CI_{Lower}-CI_{Upper}	R^2
PID-5 detachment	−0.42	−2.18*	−0.80,−0.04	
PID-5 antagonism	0.56	2.28*	0.08,0.95	
PID-5 disinhibition	0.23	0.97	−0.24,0.71	
PID-5 psychoticism	−0.52	−2.12*	−0.98,−0.06	
Criterion: current income				
Model summary				0.08*
Childhood unpredictability	0.17	1.62	−0.04,0.37	
Childhood resource availability	0.19	1.23	−0.11,0.49	
Sex	−0.07	−0.32	−0.53,0.38	
Childhood unpredictability × sex	0.00	0.05	−0.16,0.17	
Childhood resource availability × sex	0.13	1.00	−0.13,0.39	
PID-5 negative affectivity	−0.08	−0.33	−0.55,0.39	
PID-5 detachment	−0.56	−2.61**	−0.99,−0.14	
PID-5 antagonism	0.49	1.75	−0.06,0.92	
PID-5 disinhibition	−0.15	−0.57	−0.68,0.38	
PID-5 psychoticism	−0.23	−0.83	−0.77,0.31	

Note. Sex is participant's sex (0 = female; 1 = male).
* $p < 0.05$.
** $p < 0.01$.

The predicted values for antagonism illustrating the interaction of childhood unpredictability × sex are presented in Panel C of Fig. 2. Simple slopes tests revealed positive associations between childhood unpredictability and antagonism for both men (β = 0.39, $p < 0.01$) and women (β = 0.28, $p < 0.01$) but the association was especially strong for men. This pattern shows that men and women tend to report higher levels of antagonism when their childhood experiences were unpredictable but the link between childhood unpredictability and antagonism was especially strong for men (Jonason et al., 2016). To examine the possibility of moderated mediation, we examined the indirect link of childhood unpredictability with current SES through antagonism for men and women. The indirect link between childhood unpredictability with current SES through antagonism was significant for men (β = 0.11, 95% CI [0.02, 0.26]) but not for women (β = 0.04, 95% CI [0.00, 0.12]). These moderated indirect effects extend the previously described moderation of the relation between childhood unpredictability and antagonism. More specifically, men who experienced unpredictable environments during childhood reported higher levels of antagonism which, in turn, was associated with higher levels of current SES. Childhood unpredictability was also positively associated with antagonism for women but antagonism failed to mediate the association between childhood unpredictability and current SES for women.

3. Discussion

Recent advancements in the conceptualization of socially undesirable personality traits (Krueger et al., 2012) have facilitated robust accounts of the potential causes and consequences of these traits in non-clinical, large-scale samples. In this study, we examined the connections between childhood socioecological conditions (i.e., self-reported harshness and unpredictability) and "pathological" personality traits (e.g., detachment, psychoticism); the role that such personality traits play in the associations between childhood socioecological conditions and life history outcomes such as number of offspring and socioeconomic status; and the role that participant's sex plays in moderating these associations.

First, we found that while all the pathological personality traits were associated with harsh and unpredictable childhood conditions; it was more a matter of the latter and not the former. This suggests to us that these traits are unlikely to be psychopathologies given the role of harshness in psychopathologies (Moreria, 2003) but, instead, may be cognitive adjustments made in response to one's childhood predictability as seen in traits like psychopathy and narcissism (Jonason et al., 2016). Said another way, unpredictability may result in changes in expectancy heuristics in people's *minds* (i.e., cognitive biases) whereas harshness may result in physical changes in people's *brains* (i.e., physical features).

Second, we detailed how variance in these personality traits was associated with life outcome data. Having fewer offspring was associated with more detachment and psychoticism. Less education was associated with more disinhibition. Lower current SES was associated with more detachment, antagonism, and psychoticism. Current income was associated with more detachment and psychoticism. We take these associations to be evidence, albeit weak, that these traits have important, undesirable outcomes. For instance, we take the psychoticism associations to be related to interpersonal problems that may be created by the peculiar cognitive distortions found in those with psychoses (e.g., eccentricity, perceptual dysregulation; unusual beliefs; Markon, Quilty, Bagby, & Krueger, 2013). In contrast, we take the detachment effects to be a function of the costs paid by creating psychological/physical distance given the centrality of interpersonal relationships in the modern professional world.

Third, we found that participant's sex played an important role in understanding both the "before" and "after" of personality pathology. We nearly replicated sex differences in neuroticism (Schmitt, Realo, Voracek, & Allik, 2008) and found that men were more detached, antagonistic, psychotic, and disinhibited than women were. Such evidence might be consistent with men's tendency to experience more externalizing dysfunctions than women. Externalizing may come with more dire costs for women (and their offspring) so that over evolutionary time, women would become unlikely to be characterized by these personality traits (Jonason & Lavertu, 2017).

We further clarified the role of participant's sex with three moderated-mediation findings which we offer tentatively. First, men (but not women) who reported more poverty as a child appear to be detached as adults and this seems to result in less income as well. Second, women (but not men) who reported more resources as a child appear to have more socioeconomic status as function of their enhanced antagonism. Antagonism in women may be costly as a domain-general pattern of behavior, but in safe environments the costs may be minimized sufficiently as to allow women to accumulate more resources for her and her offspring. Third, an unpredictable childhood
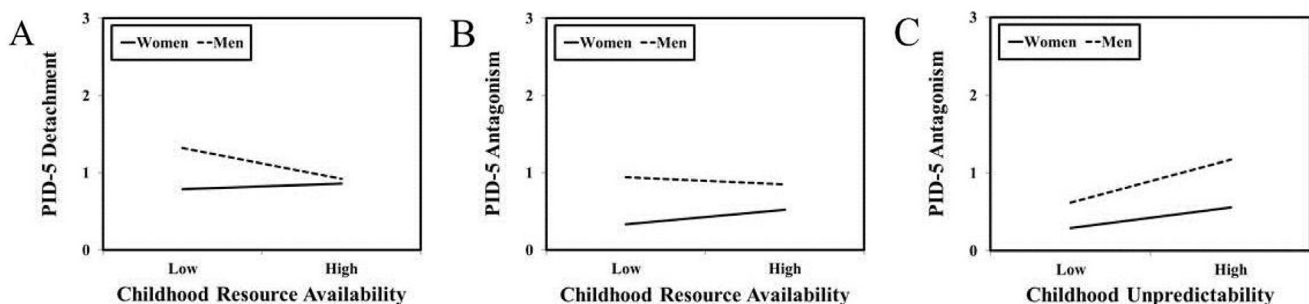

Fig. 2. Predicted values for PID-5 Detachment (Panel A) and PID-5 Antagonism (Panels B and C) illustrating the interaction of sex and socioecological condition at values that are one standard deviation above and below their respective means.

appeared to increase antagonism in men and women but this heightened antagonism only translated into more socioeconomic status for men. This may suggest a specialized sensitivity in men that contributes to important outcomes like intersexual attraction (Li, Bailey, Kenrick, & Linsenmeier, 2002) and intrasexual competition (Puts, 2010). That is, men who reported being detached following harsh childhood conditions tended to earn less in adulthood, whereas women who reported being antagonistic following harsh childhood conditions tended to have higher levels of status. In addition, men who experienced unpredictable environments during childhood tended to report higher levels of antagonism which, in turn, was associated with higher levels of status during adulthood.

3.1. Limitations and conclusions

This research has a number of potential limitations. The most important of these limitations is that we relied on retrospective reports of childhood conditions to link them to personality traits which undermines the trustworthiness of our process models. That said, we are unaware of any research that would lead us to expect systematic errors or biases in these retrospective self-reports of childhood socioecological conditions so we can tentatively trust our findings, especially because they are consistent with theoretical predictions and prior work. Second the sample could be criticized on at least two fronts. A clinician might claim that the examination of pathological personality traits outside of a clinical sample does little to enhance our understanding of and treatment of those suffering from these traits. Alternatively, researchers might criticize our sample as being W.E.I.R.D. (i.e., Western, educated, industrialized, rich, and democratic; Henrich, Heine, & Norenzayan, 2010) and thereby, limited in generalizability. Third, despite expanding the range of pathological personality traits being considered in the general population, there remain many other aspects of personality pathology to consider in future studies (e.g., depression). Future research should expand the forms of psychopathology being considered in order to present a more complete picture of the relationship between childhood socioecological conditions and adult forms of psychopathology. Fourth, we examined a limited range of adult life outcomes. Future research should examine a wider spectrum of outcomes that cover social relationships which are a central part of how pathological personality traits impact people's lives and adopt longitudinal as opposed to cross-sectional method. Despite these limitations, we have provided novel and theoretically-derived tests about pathological personality traits.

In this study, we have provided new information about the correlates of personality pathology. We showed (1) how unpredictability of one's childhood environment (i.e., the before) is more important than harshness in predicting pathological personality traits, (2) pathological personality traits were often associated with undesirable life outcomes in adulthood (i.e., the after) with the most wide ranging of these being for psychoticism and detachment, (3) men and women differed in their levels of various pathological personality traits, and (4) there were sex-differentiated mediation effects in how childhood socioecological conditions predicted adult life outcomes through antagonism and detachment. We encourage more work trying to understand personality pathology out of clinical contexts using continuous measures of the traits.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* New York, NY: SAGE.

Bjorklund, D. F. (2015). Developing adaptations. *Developmental Review, 38*, 13–35.

Bowlby, J. (1979). *The making and breaking of affectional bonds.* London, England: Tavistock.

Brumbach, B. H., Figueredo, A. J., & Ellis, B. J. (2009). Effects of harsh and unpredictable environments in adolescence on development of life history strategies: A longitudinal test of an evolutionary model. *Human Nature, 20*, 25–51.

Chmielewski, M., Bagby, R. M., Markon, K., Ring, A. J., & Ryder, A. G. (2014). Openness to experience, intellect, schizotypal personality disorder, and psychoticism: Resolving the controversy. *Journal of Personality Disorders, 28*, 483–499.

Few, L. R., Miller, J. D., Rothbaum, A. O., Meller, S., Maples, J., Terry, D. P., ... MacKillop, J. (2013). Examination of the section III DSM-5 diagnostic system for personality disorders in an outpatient clinical sample. *Journal of Abnormal Psychology, 122*, 1057–1069.

Griskevicius, V., Delton, A. W., Robertson, T. E., & Tybur, J. M. (2011). The environmental contingency of life history strategies: Influences of mortality and socioeconomic status on reproductive timing. *Journal of Personality and Social Psychology, 100*, 241–254.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York, NY: Guilford Press.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*, 61–83.

Hurst, J. E., & Kavanagh, P. S. (2017). Life history strategies and psychopathology: The faster the life strategies, the more symptoms of psychopathology. *Evolution and Human Behavior, 38*, 1–8.

Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: The big Five revisited. *Journal of Applied Psychology, 85*, 869–879.

Jonason, P. K., & Lavertu, A. N. (2017). The reproductive costs and benefits associated with the dark triad traits in women. *Personality and Individual Differences, 110*, 38–40.

Jonason, P. K., Icho, A., & Ireland, K. (2016). Resources, harshness, and unpredictability: The socioeconomic conditions associated with the dark triad traits. *Evolutionary Psychology, 14*, 1–11.

Krueger, R. F., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychological Medicine, 42*, 1879–1890.

Li, N. P., Bailey, J. M., Kenrick, D. T., & Linsenmeier, J. A. W. (2002). The necessities and luxuries of mate preferences: Testing the tradeoffs. *Journal of Personality and Social Psychology, 82*, 947–955.

Markon, E., Quilty, L. C., Bagby, R. M., & Krueger, R. F. (2013). The development and psychometric properties of an informant-report form of the personality inventory for DSM-5 (PID-5). *Assessment, 20*, 370–383.

Moreria, V. (2003). Poverty and psychopathology. In S. C. Carr, & T. S. Sloan (Eds.), *Poverty and psychology* (pp. 69–86). New York, NY: Springer.

Pollock, N. C., McCabe, G. A., Southard, A. C., & Zeigler-Hill, V. (2016). Pathological personality traits and emotion regulation difficulties. *Personality and Individual Differences, 95*, 168–177.

Puts, D. A. (2010). Beauty and the beast: Mechanisms of sexual selection in humans. *Evolution and Human Behavior, 31*, 157–175.

Schmitt, D. P., Realo, A., Voracek, M., & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in big Five personality traits across 55 cultures. *Journal of Personality and Social Psychology, 94*, 168–182.

Sell, A., Tooby, J., & Cosmides, L. (2009). Formidability and the logic of human anger. *Proceedings of the National Academy of Sciences, 106*, 15073–15078.

Southard, A. C., Noser, A. E., Pollock, N. C., Mercer, S. H., & Zeigler-Hill, V. (2015). The interpersonal nature of dark personality features. *Journal of Social and Clinical Psychology, 34*, 555–586.

Volk, A. A., & Atkinson, J. A. (2013). Infant and child death in the human environment of evolutionary adaptation. *Evolution and Human Behavior, 34*, 182–192.

White, B. A., Jarrett, M. A., & Ollendick, T. H. (2013). Self-regulation deficits explain the link between reactive aggression and internalizing behavior problems in children. *Journal of Psychopathology and Behavioral Assessment, 35*, 1–9.