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Original Article

Psychopathic Traits in Youth and Associations with Temperamental Features

Results from a Performance-Based Measure

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Abstract. The present study aims to disentangle motivational and self-regulatory pathways to psychopathic traits in youth with severe antisocial behavior. The associations between self-reported psychopathic traits and indices derived from a laboratory measure assessing fear sensitivity and self-regulation were evaluated. Low scores on fear sensitivity and self-regulation were related to high scores on the self-reported Callous/Unemotional factor of psychopathic traits and the Callousness dimension in particular. The present study provides at least partial evidence for both motivational (low-fear hypothesis; Lykken, 1995) and self-regulatory (response modulation hypothesis; Patterson & Newman, 1993) accounts of psychopathic traits in youth.

Keywords: psychopathic traits, youths, temperament, performance-based measure

Introduction

The presence of psychopathic traits in youth samples designates a distinct and clinically important subgroup of antisocial youth with especially severe conduct problems, delinquency, aggression – or all three (Frick & Dickens, 2006). Psychopathic traits in youth typically comprise three factors: callous/unemotional, narcissism, and impulsivity/irresponsibility (Frick, Bodin, & Barry, 2001). Growing evidence suggests that psychopathic traits (and especially the callous/unemotional [CU] factor) are related to a distinctive temperamental profile (Frick & White, 2008) characterized by low reactivity to threatening and emotionally distressing stimuli (Blair, 1999). In particular, compared with other youth, youth with psychopathic traits are less sensitive to cues of punishment when a reward-oriented response set is primed (Fisher & Blair, 1998; O'Brien & Frick, 1996). The temperamental profile of youth with psychopathic traits is also characterized by high levels of impulsivity and sensation seeking (Frick et al., 2003). Nevertheless, the question of how psychopathic traits relate to temperament dimensions is underinvestigated. This paucity of research is surprising given that the idea that temperamental factors underlie the emergence of psychopathic traits is fundamental to several influential conceptualizations of psychopathy (Frick & Morris, 2004).

Motivational Versus Self-Regulatory Models of Psychopathy

Temperament consists of both reactive (responsiveness to incentives/disincentives) and self-regulatory (ability to control/modulate behavior: e.g., effortful control [EC]; Rothbart, Ahadi, & Evans, 2000) features. Consistent with this distinction, two different but potentially overlapping categories of etiological models of psychopathy can be distinguished: motivational accounts and self-regulatory accounts (Fowles & Dindo, 2006). Motivational accounts focus on deficits in the reactivity of motivational systems. Cleckley (1976) posited a general lack of emotionality in psychopaths, and Lykken (1957, 1995) hypothesized more specifically that so-called "primary" (classic) psychopaths possess an innate fearless temperament. Lykken (1995) attributed the fearlessness of the primary psychopaths to a deficit in the motivational systems of behavioral inhibition. Studies using questionnaires (Bijttebier, Beck, Claes, & Vandereycken, 2009) and behavioral tasks (Blair, 2006) revealed that psychopathy (especially the affective or CU component) is associated with atypical reactivity of motivational systems, namely, a low reactivity to aversive/fear-related stimuli.

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In contrast, self-regulatory accounts assume that psychopathic individuals show core deficits in cognitive/attentional control. Self-regulatory accounts are not mutually exclusive with motivational accounts, because (1) deficits in self-regulation may contribute to affective deficits, such as insufficient fear, and (2) affective deficits, such as insufficient fear, may contribute to deficits in self-regulation. Nevertheless, at least some self-regulatory accounts are motivationally neutral. The response modulation hypothesis (Patterson & Newman, 1993) is probably the best known (although by no means the only) self-regulatory account. Response modulation refers to the activation of cognitive processes in which contextual information is used to modify ongoing behavior. According to this account, individuals with psychopathic traits fail to shift their attention to contextual information that would allow them to reappraise the current response set. Because such contextual information is not limited to punishments or rewards (and can include affectively neutral information), it differs from traditional motivational accounts.

Pham, Vanderstukken, Philippot, and Vanderlinden (2003) found evidence for selective attention and specific executive function deficits among psychopaths completing classic cognitive tasks: They were particularly impaired in regulating their attention when exposed to distracters and were impaired in planning tasks that require the inhibition of irrelevant information. In line with the response modulation hypothesis, Arnett, Smith, and Newman (1997) found that the avoidance of punishment cues in psychopaths is disturbed only in relatively restricted situations where a dominant response set for reward has been established and in which information processing is needed to avoid punishment. In some studies, psychopaths show a normal avoidance of punishment when the punishment contingencies are explicit and salient from the outset of the task (Arnett et al., 1997). In most of these studies, however, the punishments were quite weak in magnitude and probably not sufficient to activate fear responses (but, see Baskin-Sommers, Zeier, & Newman, 2009, for evidence that altering attentional focus can eliminate psychopaths' deficits in fear-potentiated startle to electric shocks). Similarly, also in line with the self-regulatory accounts, deficits in passive avoidance occur especially when quick response is needed. In tasks where the participants were instructed to pause before responding, children with psychopathic traits committed fewer passive avoidance errors compared with conditions without instructions to pause (O'Brien & Frick, 1996).

The evidence that children with high psychopathic traits show a preference for dangerous and exciting activities and a lowered sensitivity for punishment (especially in the presence of competing reward contingencies) has been explained by different temperamental mechanisms (Frick & Morris, 2004). Motivational accounts presume a deficit in reactivity to aversive/fear-related stimuli.Self-regulatory accounts, however, presume a cognitive deficit in the ability to focus on relevant contextual cues once a response set is formed rather than an insensitivity to cues for punishment.

The Present Study

We need an enhanced understanding of the processes through which temperament places children at risk for severe antisocial behavior. The present study serves to disentangle potentially different pathways to psychopathic traits using a performance-based measure of reward/punishment and cognitive control. Most research on the underlying mechanisms of psychopathy has been performed on adult samples (Salekin, 2006) and has not simultaneously investigated motivational and self-regulation pathways to psychopathic traits. The two theoretical accounts for psychopathy generate two competing hypotheses to be tested. First, in line with the motivational accounts of psychopathy, core deficits in the reactivity of motivational systems are expected in persons scoring high on psychopathic traits. The low fear hypothesis would be borne out by a negative association between psychopathic traits and fear sensitivity. Second, evidence for the self-regulatory account would be present if negative associations between psychopathic traits and self-regulation measurements emerged. Furthermore, it is possible that both pathways of motivational difficulties and self-regulatory deficits would be disturbed in youth with psychopathic traits, resulting in associations between psychopathic traits and both fear sensitivity and the self-regulation measures.

Consistent with the possibility that both pathways to psychopathic traits could be present, the second aim of the study was to obtain further insight into disturbed processes that could be differentially related to the three psychopathy factors. The motivational accounts – in which deficient affective reactions are assumed to be central to psychopathy – are frequently linked to the CU factor of psychopathy (Fowles & Dindo, 2006; Frick & Morris, 2004). Concerning self-regulatory deficits, some authors have proposed that the impulsivity/irresponsibility factor of psychopathy reflects a deficit in higher-order self-regulation processes (Patrick, 2007). However, recent studies indicate that problems in inhibiting prepotent behaviors, which are central in the self-regulatory accounts, apply especially to the affective factor of psychopathy (Baskin-Sommers, Zeier, & Newman, 2009; Dvorak-Bertsch, Curtin, Rubinstein, & Newman, 2009). We expect a negative association with the fear sensitivity and/or the self-regulation measures, especially for the CU factor of psychopathy. Furthermore, factor analyses indicate that the Callous/Unemotional dimension can be differentiated into three subfacets: "Callousness" (i.e., lack of empathy, guilt, and remorse for misdeeds), "Uncaring" (i.e., lack of concern about one's performance in tasks and for the feelings of others), and "Unemotional" (i.e., absence of emotional expression) (Essau, Sasagawa, & Frick, 2006). Research on differential associations between the subfacets of the CU traits and temperamental features is scarce. From previous research, the un-

emotional component does not seems to assess the core elements of CU traits, such as absence of fear, but rather low emotional expression (Roose, Bijttebier, Decoene, Claes, & Frick, 2010). Based on these findings, we predict that the Callousness and Uncaring factors of CU traits are especially related to an aberrant pattern of reward and punishment sensitivity and/or self-regulatory problems on a performance-based measure. High scores on the Unemotional facets do not necessarily result in an aberrant pattern of behavior on a performance-based measure.

To summarize, the present study extends the existing research by assessing the differential associations between the three psychopathy factors – and in more detail with the CU factor/dimensions – with a performance-based measurement of temperament in a sample of youth with severe antisocial behavior. To measure the three factors of psychopathy and the affective factor at a more fine-grained level, we included two psychopathy measurements in the present study.

Method

Participants

Seventy-nine adolescents between 14 and 18 years (mean age = 16.15, *SD* = 1.17; 92% males) with severe behavioral problems participated in the present study. All participants were attending a special education program for children with severe behavioral problems (including conduct disorder and oppositional defiant disorder). An exclusion criterion of a total IQ (TIQ) below 70 was used. Information on IQ, psychiatric diagnoses, and medication use was obtained from school records. Based on chart records, a large subset of the participants (60%) had attention-deficit/hyperactivity disorder (ADHD). Besides ADHD, other comorbid diagnoses included autism spectrum disorder (ASD: 19%), learning disabilities (12.7%), dyslexia (3.8%), and dyscalculia (5.18%). Furthermore, 19% of the youth had attachment problems. Medication use was common in the present sample: 43% were receiving stimulant medication (methylphenidate preparations), 28.6% antipsychotic medication, and 2.4% antiepileptic medication.

Measures

The Youth Psychopathic Traits Inventory – Short Version (YPI-S; van Baardewijk et al., 2010) is a self-report questionnaire based on the original version of the YPI (Andershed, Kerr, Stattin, & Levander, 2002). The YPI-S comprises three factors also present in the original YPI: a Grandiose-Manipulative (GM) factor, a Callous-Unemotional (CU) factor, and an Impulsive-Irresponsible (II) factor. The strategy of item reduction was used to construct the YPI-S, resulting in 18 items, 6 items for each of the three factors. Item reduction was reached through a stepwise selection process using principal components analysis on the original questionnaires and through empirical (magnitude of loading of the items) and content-related (representativeness, relevance, and complexity of the items) considerations. Van Baardewijk et al. (2010) demonstrated adequate internal consistencies of the YPI-S subscales and a high convergence between both the YPI and the YPI-S, and showed similar correlations with external criterion measures.

The Inventory of Callous-Unemotional Traits (ICU; Frick, 2004) is a 24-item scale designed to assess the callous and unemotional factor of psychopathic traits in youth. The items are rated on a 4-point scale. There are parent, teacher, and self-report versions of the ICU; only the self-report version was used in the present study. Factor analyses have typically revealed three factors: callousness (11 items), uncaring (7 items), and unemotional (5 items), which load on a single higher-order CU factor (Essau et al., 2006). Roose et al. (2010) confirmed this factor structure and found evidence for the reliability and both convergent and discriminant validity of the ICU.

The Revised PSRTT-C (PSRTT-C; Roose, Bijttebier, Lilienfeld, Van der Oord, & Claes, 2012; based on Colder & O'Connor, 2004) is a performance-based measure to assess both motivational and self-regulatory temperamental features. The task was created in an object-oriented pool-based program (Affect 4.0), developed with a C++ for the Windows platform (Spruyt, Clarysse, Vansteenwegen, Baeyens, & Hermans, 2010). This task was administered using a Dell Latitude Laptop with a 15.4-inch monitor. Reaction times (RTs) to the stimuli were recorded with a response box with two response buttons, which recorded responses in milliseconds (ms). At the beginning of the experimental blocks, a written description of the block was read aloud by the research assistant. Six experimental blocks were administered in a fixed order (neutral (N), neutral dual-task (N-DT), prepunishment (preP), prepunishment dual-task (preP-DT), punishment (P), postpunishment (postP)). The same task with the same stimuli was used in each block: Participants had to discriminate a two-digit number, which was presented in a colored circle between numbers below and above 50. In the dual task conditions participants were instructed to perform two tasks simultaneously: discriminating numbers above and below 50 and counting how many sounds were presented during the block. In the neutral and the neutral dual-task blocks, no points could be earned or lost, and no reference to a reward was made. In the last four blocks, correct discriminations result in earning a variable number of points, which depend on the RT.[1] In the first four blocks, there was no possibility of punishment, although in the punishment block, participants lost 50% of the accumulated points if they

[1] The formula for calculating the number of points earned after each response was: earned points = $(635/RT)^3$. Wrong answers results in neither winning nor losing points.

responded when a red circle was presented (irrespective of correctness of the response). In the postpunishment condition, participants were told to ignore the colored circles again, as no punishment (loss of points) during trials with red circles was given. The visual stimuli were presented during maximum 3000 ms. No fixation-cross or pause was used between the presentation of stimuli. The auditory stimuli of the dual task conditions were presented during 1000 ms. The inclusion of the dual-task paradigm was expected to put pressure on the response modulation capacities of the participants. Participants were told that they should not respond to the tones when they were presented, and that they should also maintain their focus on the number discrimination task. They were informed that they had to count the number of tones during the block, and that they would be asked to report this number afterward. At the end of a dual-task block, participants needed to indicate the number of tones they heard during the block. Different numbers of sounds were used in the N-DT and the preP-DT blocks to preclude guessing strategies, whereby participants could use the information of the number of sounds of one block to guess the correct number of sounds in the other block[2].

Roose et al. (2012) found preliminary evidence for the validity of the *PSRTT-C* as assessing both self-regulatory and reactive temperamental aspects. Based on comparison of RTs between specific blocks, indices of reactivity [RT (P) – RT (preP); RT (red trials postP) – RT (nonred trials postP); RT (preP) – RT (N)] and two indices of self-regulation were derived [RT (N-DT) – RT (N); RT (preP-DT) – RT (preP)]. Only two indices were associated with self-reported self-regulatory and reactive temperamental aspects:

1. [RT (P) – RT (preP)] was positively related to fear sensitivity (BIS-FFFS) tapped by the BIS/BAS scales (Carver & White, 1994); and
2. RT (N-DT) – RT (N) was positively related to the effortful control scale of the EATQ (EATQ-R; Ellis & Rothbart, 2001).

The other indices derived from this performance-based task did not show significant associations with self-reported temperamental features. In line with this research, two only indices were used in the present study: [RT (P) – RT (preP)] as a fear sensitivity index (FSI) and [RT (N-DT) – RT (N)] as a self-regulation index (cSRI).

The low fear hypothesis would be corroborated by a negative association between psychopathy and FSI, meaning that participants scoring high on psychopathy would show less slowing of the RT after the possibility of punishment. The self-regulatory hypothesis would be corroborated if participants with high levels of psychopathic traits invested less effort in combining both tasks, resulting in a smaller difference in RT between the neutral-dual block and neutral block conditions.

Procedure

The study was approved by the Institutional Review Board of the Department of Psychology of the University of Leuven. Adolescents and their parents were informed about the study and invited to sign the informed consent. A response rate of 86% was obtained. The adolescents first performed the PSRTT-C and then completed the self-report questionnaires in one individual session of about 40 min. Different rewards were received for participation depending on the amounts of points participants received during the PSRTT-C[3].

Overview of Statistical Analyses

The Statistical Package for the Social Sciences (SPSS) version 17.0 was used for data analysis. For the PSRTT-C, the mean reaction time (RT) of the experimental blocks was calculated for each participant. The RTs that exceeded three standard deviations above/below the mean were considered outliers and were excluded in the calculation of mean reaction times. In total 228 datapoints were excluded (1.9%). Only the last 50% of the trials were used in the analysis, to ensure that the manipulation effects of giving reward/punishment were installed.

Results

Table 1 presents the means and standard deviations of questionnaires, the reaction times for the PSRTT-C, and the internal consistencies (Cronbach's αs) of the questionnaires. The internal consistencies of the psychopathy (sub)scales were adequate. In order to maximize statistical power, the data were collapsed across age, gender, ADHD, and medication status.[4]

As expected, significant correlations among the subscales of the YPI (ranging from 0.28 to 0.32), and among the sub-

[2] In the N-DT block nine sounds were presented (at trial 2, trial 6, trial 13, trial 20, trial 22, trial 30, trial 34, trial 39, trial 44), and in the PreP-DT block 10 sounds were presented (at trial 3, trial 7, trial 12, trial 15, trial 20, trial 24, trial 33, trial 38, trial 44, trial 49).

[3] (1) < 400 points: rewards of the amount of 2 EUR were given (a soft drink and a chocolate bars); (2) between 400–1200 points: rewards of the amount of 5 EUR were given (a gift voucher of 5 EUR); (3) > 1200 points: rewards of the amount of 10 EUR were given (a gift voucher of 10 EUR).

[4] Age, gender, and medication use (methylphenidate: yes/no; antipsychotic drugs: yes/no) were not significantly associated with the FSI and the cSRI index of the PSRTT-C nor with the psychopathy (sub)scales. ADHD status was significant related only to FSI ($t(47) = 2.56$; $p = .014$). The correlational analyses were repeated with correction for ADHD status, but both the pattern and the magnitude of the associations were very similar to those reported in Table 2. The data are available upon request from the corresponding author.

Table 1. Descriptives of self-report questionnaires and PSRTT-C

	Mean	*SD*	α
YPI Total	18.49	7.67	.80
YPI GM	5.32	3.81	.77
YPI CU	4.02	3.27	.70
YPI II	9.15	3.21	.64
ICU Total	26.47	9.79	.82
ICU Callousness	9.14	4.80	.71
ICU Uncaring	9.75	4.78	.78
ICU Unemotional	7.58	3.73	.78
RT (Neutral)	592.60	95.96	
RT (Neutral dual-task)	713.30	154.20	
RT (Prepunishment)	561.44	109.29	
RT (Prepunishment dual-task)	624.65	139.56	
RT (Punishment)	692.66	152.32	
RT (Non-red circles postpunishment)	539.77	97.59	
RT (Red circles postpunishment)	636.60	160.81	

Notes. YPI: The Youth Psychopathic Traits Inventory; GM: Grandiose Manipulative; II: Impulsive/Irresponsible; CU: Callous Unemotional; ICU: Inventory of Callous and Unemotional Traits; RT: Reaction Time; *SD*: standard deviation, α: Cronbach's α

Table 2. Zero-order and partial correlations between the PSRTT-C and psychopathy questionnaires

	FSI		cSRI	
	Bivariate	Partial	Bivariate	Partial
YPI GM	–.14	–.06	–.13	–.04
YPI CU	–.14	–.06	–.23*	–.19*
YPI II	–.18	–.13	–.09	–.01
YPI Total	–.20*		–.20*	
ICU Callousness	–.23*	–.21*	–.25*	–.21*
ICU Uncaring	–.13	–.08	–.14	–.06
ICU Unemotional	–.01	.08	–.10	–.02
ICU Total	–.18		–.23*	

Notes. YPI: The Youth Psychopathic Traits Inventory – Short version; GM: Grandiose Manipulative; II: Impulsive/Irresponsible; CU: Callous Unemotional; ICU: Inventory of Callous and Unemotional Traits; FSI: Fear Sensitivity Index; cSRI: Self-Regulation Index. Partial correlations were corrected for the subscales of the same instrument; (*) Correlation is significant at the .05 level (one-tailed tests of significance).

scales of the ICU (ranging from 0.28 to 0.41) emerged. Given the high correlations among the subscales of the psychopathy measures, clearer insight into the differential associations can obtained by using both bivariate and partial correlations. Table 2 reports the bivariate and partial correlations between self-reported psychopathic traits (YPI-S, ICU), on the one hand, and performance on the PSRTT-C (assessing fear sensitivity and self-regulation) on the other. Similar patterns of associations for the bivariate as the partial correlations emerged. The total psychopathy score were inversely associated with both the fear sensitivity and self-regulation index. The YPI-S Callous/Unemotional subscale, the ICU total scale and the ICU Callousness scale were inversely related to the self-regulation index (cSRI) derived from the PSRTT-C. Nevertheless, when applying significance tests for the difference of dependent correlations (http://www.quantitativeskills. com/sisa/statistics/correl.htm; note that this website allows one to compute either independent or dependent correlations, and we used it for the latter), the difference in correlations between the CU factor and the two other psychopathy factors with the cSRI was found to be nonsignificant (cSRI: bivariate: $r_{CU\text{-}GM}$: $t(76) = 0.82$, $p = .21$; cSRI: $r_{CU\text{-}II}$: $t(76) = 1.06$, $p = .15$). Furthermore, the difference between the correlations of the callousness subscale and the other two ICU subscales was not significant. Hence, the differences in magnitude among the psychopathy factors and the cSRI must be interpreted with caution.

The ICU Callousness subscale also showed a significant negative association with the fear sensitivity index (FSI). The ICU Uncaring and Unemotional subscales were not significantly related to performance on the PSRTT-C. Tests of the significance of the difference between dependent correlations revealed that the only significant difference was between Callousness and Unemotional for the FSI ($r_{Callousness\text{-}Unemotional}$: $t(76) = 1.64$, $p \leq .05$).

Discussion

The present study provides insight into the underlying etiological processes of psychopathic traits in childhood. Motivational accounts assume that psychopathic individuals show core deficits in the reactivity of motivational systems, accompanying emotionality, or both, whereas self-regulatory accounts assume that psychopathic individuals show core deficits in systems involved in inhibition and modulation of behavior. In accord with this distinction, separable pathways associated with psychopathic traits are proposed in several theoretical frameworks: low fear sensitivity (Lykken, 1995) and self-regulation deficits (Patterson & Newman, 1993). The present study evaluated the associations between self-reported psychopathic traits and indices derived from a laboratory measure assessing fear sensitivity and self-regulation (PSRTT-C). It focused on the associations between the PSRTT-C and the three factors of psychopathic traits in youth.

In general, the results provided at least partial evidence for both motivational and self-regulatory accounts of psychopathy. As predicted, significant negative correlations between psychopathic traits and both the FSI and cRSI of the PSRTT-C emerged especially for the CU factor of psychopathy, particularly the Callousness facet. This finding offers provisional support for motivational models, although it may not be entirely inconsistent with self-regulatory accounts. For example, Arnett et al. (1997) found that psychopaths, in contrast to nonpsychopaths, did not slow

down following the introduction of monetary punishment, and that they interpreted their findings as consistent with the response modulation model, a prominent self-regulatory account. Unexpectedly, in our study, the Uncaring aspect was not significantly associated with the indices assessing self-regulation abilities and fear sensitivity, although the differences between the correlations of the Callousness and the Uncaring subscale were not significant. The hypothesized distinction between Callousness and Unemotional facets was supported for the motivational account, as a significant difference between the correlations with FSI emerged for the Callousness and the Unemotional facet. Conversely, the correlations with the cRSI (linked to the self-regulatory account) were not significantly different.

In line with the tendency to consider the Callous/Unemotional factor as the most essential psychopathy factor for designating a distinct subgroup of antisocial youth (Frick & Dickens, 2006), the associations between the Grandiose/Manipulative and Impulsive/Irresponsible factors and the performance on the PSRTT-C were not significant. However, it should be noted that the difference among the correlations of the three subscales of the YPI and PSRTT-C variables did not reach significance. Nevertheless, it is possible that these differences would have become significant with a larger sample size and larger resulting statistical power.

The results of the present study should be interpreted in light of several limitations. First, we used a selected sample of youth with behavior problems, resulting in a predominantly male sample. Future studies are needed to examine the generalizability of findings across samples with more girls with behavioral problems. Second, only school records were used to obtain information on IQ and comorbid diagnoses. Using the school records, a large subsample of the participants had ADHD. This comorbidity is consistent with the results of Abikoff and Klein (1992), who showed that the substantial majority of children with childhood-onset conduct disorder also meet criteria for ADHD. Third, it was not possible to receive the permission to interrupt the medication use on the day of testing. Although no significant effect of methylphenidate or antipsychotic drugs use was found on PSRTT-C performance, the present results should be interpreted with caution. Fourth, because no randomization of the sequence of the blocks across participants was possible, practice effects, boredom, or both, could have influenced our results. Further research will needed to determine, however, whether such effects interact statistically with psychopathy levels. Fifth, the performance-based task used in the present study is newly developed. More research is needed to further establish the validity of the indices derived from the task. Alternative explanations (e.g., confounding with self-regulatory mechanisms) should be ruled out especially for the fear sensitivity index.

These limitations notwithstanding, our findings offer further insight into the processes underlying psychopathic traits. The present study provides at least some evidence for both the motivational (low-fear hypothesis) and self-regulation (response modulation hypothesis) accounts of psychopathic traits in youth. Moreover, low scores on fear sensitivity and self-regulation were related to high scores on the Callous/Unemotional factor of psychopathic traits and the Callousness dimension in particular. Regarding the motivational account, evidence for distinctive pathways underlying mechanisms for both Callousness and Unemotional facets of CU traits was found. Although the Callousness facet was associated with a motivational deficit (low fear sensitivity), the Unemotionality facet was not. Further work will be needed to examine the generalizability of our findings to other laboratory tasks, and to ascertain the developmental linkages between callousness in youth and the core affective traits of psychopathy (e.g., guiltlessness, lack of empathy) in adulthood.

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