



Psychopathy and looming cognitive style: Moderation by attentional control

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ABSTRACT

Psychopathy has long been associated with lower anxiety. This study examined the relationship between self-reported psychopathy and one of the anxiety-related cognitions, looming cognitive style (LCS; Riskind, Williams, Gessner, Chrosniak, & Cortina, 2000), among students. LCS reflects the tendency to perceive danger as rapidly increasing, as opposed to making a static risk assessment. This study focused on LCS not only because it has a strong association with anxiety, but also because studies employing the Card Playing Task have shown that psychopathy predicts difficulty in detecting changing contingencies. Attentional control was included as a possible moderator of a psychopathy–LCS link. Two questionnaire studies ($n = 157$ and 312) revealed an inverse relation between psychopathy and LCS in low-attention participants. This suggests that reduced cognitive resources inhibited those with psychopathic tendencies from imagining rapidly developing threats. The results are discussed in terms of the resource requirements of risk cognitions, the multi-dimensional nature of attention, and a defective behavioral inhibition system in (secondary) psychopathy. This study suggests the importance of considering attention when analyzing the psychopathy–anxiety link. Future studies should use multi-dimensional analysis of attentional control and multiple measures of psychopathy.

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1. Introduction

Psychopathy is a personality disorder with two components: primary psychopathy reflects callous unemotionality and a manipulative interpersonal style, and secondary psychopathy includes impulsivity and antisocial behaviors. These two components are represented by the two factors of the Psychopathy Checklist-Revised (PCL-R; Hare, Harpur, & Hakstian, 1990), which is a standard interview-based measure of psychopathy. The trait approach to psychopathy assumes it to be a maladaptive configuration of traits continuous from the normal to the criminal population (e.g., Gaughan, Miller, Pryor, & Lynam, 2009).

1.1. Reduced anxiety in psychopathy and postulated role of attention

Primary psychopathy has been associated with lower anxiety, while secondary psychopathy is often related to enhanced anxiety (Hicks & Patrick, 2006). However, the mechanism for lower anxiety in primary psychopathy has not been clarified. Patrick (2007) postulated that anxious responding itself is compromised. On the other hand, the response modulation model (Newman & Lorenz, 2003) considers that psychopathic individuals have difficulty in shifting attention to information peripheral to their concerns, which lead to perseveration of reward-related responses in the

face of punishment cues (Newman, Patterson, & Kosson, 1987). Dvorak-Bertsch, Curtin, Rubinstein, and Newman (2009) found that primary psychopathy was related to reduced fear-potentiated startle (FPS) among noncriminal undergraduates who were instructed to focus on the threat-irrelevant dimension of an experimental stimulus (colored letters, where color predicted electric shocks, while case did not). Newman, Curtin, Bertsch, and Baskin-Sommers (2010) found a similar pattern among prisoners. These findings suggest that attention moderates the effect of psychopathy on affective processing.

These studies suggest that psychopathic individuals are good at attentional orienting (selection of incoming information). Zeier, Maxwell, and Newman (2009) used a flanker task with cueing and found that when a target was cued, inmates with primary psychopathy exhibited less interference from distractors than nonpsychopathic controls. Sadeh and Verona (2008) employed the Perceptual Load Task (Maylor & Lavie, 1998), which presents target letters on a circle, with distractors located outside the circle. Primary psychopathy (noncriminal population) predicted less interference by distractors.

Based on these findings, we examined the psychopathy–anxiety link, with attentional control as a moderator. Although Dvorak-Bertsch et al. (2009) and Newman et al. (2010) demonstrated an effect of manipulated attentional focus on FPS, it is also important to examine how these variables are interrelated using different measures. Hicks and Patrick (2006) found a negative relation between psychopathy and the personality trait of negative affectivity.

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This study aims to examine the relationships of psychopathy, anxiety, and attention by using dispositional measures.

1.2. Looming cognitive style

We use looming cognitive style (LCS; Riskind et al., 2000), a strong correlate of anxiety, which has not been used in the psychopathy literature. LCS involves the tendency to perceive danger as rapidly growing (Riskind et al., 2000). In the prevalent cognitive model, anxiety is associated with the overestimation of threat (Beck & Emery, 1985). Overestimation is often assessed using probability and/or severity ratings about hypothetical events. However, Riskind et al. (2000) found that threat assessment using items reflecting the perception of rapidly growing danger (e.g., “Are the chances of you having difficulty with the relationship decreasing, or increasing and expanding with each moment?”) was more predictive of anxiety symptoms than static risk assessment. The predictive power of LCS has been repeatedly demonstrated. It predicts the shared variance of diverse anxiety symptoms (Williams, Shahar, Riskind, & Joiner, 2005), anxiety but not depressive symptoms better than other cognitive predictors (Reardon & Williams, 2007), and short-time change (1 week) in anxiety symptoms, even after controlling for depression and intolerance of uncertainty (Riskind, Tzur, Williams, Mann, & Shahar, 2007).

In addition to its high predictive power for anxiety, there is a reason to expect a relation between psychopathy and LCS. Evidence indicates that psychopathy leads to difficulty in detecting changing contingencies. Newman et al. (1987) found that psychopathic inmates had difficulty recognizing changing contingencies in the Card Playing Task (CPT) where the risk of punishment gradually rises when one continues to play instead of quitting at an appropriate point, and ends up with a larger loss. Koki and Sugiura (2007) replicated this pattern with noncriminal students. Therefore, psychopathy is expected to be associated with difficulty in recognizing increasing danger. A dynamic expectation of progressively increasing danger is the target that LCS involves.

1.3. The present study

We report two studies using self-report dispositional measures to examine the relation between psychopathy and LCS, with attentional control as a moderator. Specifically, based on studies indicating that primary psychopathy predict reduced FPS when they divert their attention away from threat (Dvorak-Bertsch et al., 2009; Newman et al., 2010), a negative correlation between primary psychopathy and LCS was expected to be pronounced for those with high attentional control. We also explored relations involving secondary psychopathy. Neuroticism was controlled for in the analyses, because it is related to LCS (Williams et al., 2005), psychopathy (Hicks & Patrick, 2006), and attentional control (Rothbart, Ahadi, & Evans, 2000).

2. Study 1

2.1. Method

2.1.1. Participants

Japanese college students ($N = 157$; 43% women; M age = 19.19, $SD = 1.77$) completed anonymous questionnaires during class, voluntarily or in exchange for partial course credit. The institutional ethical review board approved the study. Participants were told that the study was about the relation between personality and cognitions, and that the data would be analyzed and presented only as group data. They were free to refuse to participate. Students only completed the questionnaires if they agreed.

2.1.2. Instruments

Levenson's Self-Report Psychopathy scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995) has two factors: primary psychopathy (16 items) and secondary psychopathy (9 items). Items are rated on a 4-point scale. The LSRP was originally developed for a non-criminal population. The reliability and validity of the LSRP are satisfactory in both noncriminal (Lynam, Whiteside, & Jones, 1999) and criminal (Brinkley, Schmitt, Smith, & Newman, 2001) populations, including temporal stability, expected correlations with related constructs, and moderate support for the two-factor structure. Sugiura and Sato (2005) back-translated the LSRP into Japanese and found a correlation pattern similar to the original version. Osumi, Kanayama, Sugiura, and Ohira (2007) provided further psychometric evidence supporting the temporal stability and factor structure of the Japanese version.

The Looming Maladaptive Style Questionnaire (LMSQ; Riskind et al., 2000) measures cognitions about two classes of hypothetical threats (social and physical), using three vignettes for each. Each vignette is rated using three items for looming cognitions (perception of chances of danger decreasing or increasing; perception of threat staying fairly constant or growing rapidly larger; and visualization of the risk becoming progressively worse). Items are rated on a 5-point scale. The LMSQ yields two subscales (social and physical). Adequate reliability has been reported (e.g., Riskind et al., 2007), together with strong predictive validity (see Section 1.2). The LMSQ was carefully translated, and two modifications were made. First, three new scenarios related to norm violations were added, because responses in such situations were thought to be relevant for psychopathy. The new scenarios included encountering a policeman while riding a bicycle wearing headphones (recently legally banned in Japan), being at risk for not getting course credit due to poor attendance, and cheating on an exam. Second, some of the physical threat vignettes were amended to fit the daily lives of the Japanese student participants (e.g., driving on an expressway was changed to riding a bicycle). This translation and revision process was done in discussion with the original researcher (John Riskind) and with graduate students in psychology in Japan. The three LMSQ subscales evidenced acceptable internal consistency (α s = .68–.76) and positive correlations with neuroticism (r s = .25–.31; $p < .01$).

Attentional control subscale of the Effortful Control (EC; Rothbart et al., 2000) scale has 12 items rated on a 7-point scale. The Japanese version has good internal consistency and test-retest reliability (Yamagata, Takahashi, Shigemasa, Ono, & Kijima, 2005). In addition, this subscale predicted enhanced performance on the Stroop color-interference task.

Neuroticism was measured by a subscale of the Big Five Scale (BFS; Wada, 1996). The BFS items are based on the Adjective Check List (ACL; Gough & Heilbrun, 1983). A series of factor analyses of 198 theoretically selected ACL items resulted in the 60-item BFS. The neuroticism subscale contains 12 trait adjectives (e.g., nervous, tense, worrying), rated on a 7-point scale and demonstrated good internal consistency.

Alpha reliabilities for the study measures, except for the LMSQ, were good (α s = .79–.90), with the exception of secondary psychopathy ($\alpha = .52$). Poor α for secondary psychopathy is consistent with previous reports (Levenson et al., 1995; Osumi et al., 2007). Although this is of concern, we used the secondary psychopathy subscale based on its validity (correlation with related variables).

2.2. Results and discussion

Secondary psychopathy was positively related to neuroticism ($r = .25$; $p < .01$), while primary psychopathy was not ($r = .03$; $p = .75$). Attentional control and neuroticism were negatively correlated ($r = -.36$; $p < .001$). These correlations mirror previous

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