



Threat perception: How psychopathy and Machiavellianism relate to social perceptions during competition



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ABSTRACT

Descriptions of successful psychopathy are synonymous with Machiavellianism: both describe high-functioning individuals who are adept at exploiting and manipulating others. However, previous research has found social-cognitive deficits associated with these traits that should decrease successful manipulation. In the present study, we investigated the presence of biases in interpersonal threat perceptions. Community members participated in a competition task and completed self-report measures of psychopathy and Machiavellianism. Analyses revealed that psychopathy, in particular callous affect, significantly predicted a bias to view individuals as unthreatening, irrespective of the targets' emotional expression or the perceivers' Machiavellianism or gender. These findings provide a meaningful distinction between psychopathy and Machiavellianism in the context of socio-cognitive deficits. Future research should further investigate specific attributes that contribute to successful manipulation and how they distinguish psychopathy and Machiavellianism.

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1. Introduction

Psychopathy and Machiavellianism are highly correlated anti-social trait constructs. This overlap has been well documented in community samples in which sub-clinical trait psychopathy (hitherto referred to simply as “psychopathy”)—which includes elements of impulsivity, thrill-seeking, and callousness—is correlated with Machiavellianism: a disposition to be sly, deceptive, and manipulative (Jonason & Krause, 2013; Jonason, Slomski, & Partyka, 2012; Lee & Ashton, 2005; McHoskey, Worzel, & Szyarto, 1998; Paulhus & Williams, 2002). This empirical and theoretical overlap has led to arguments that Machiavellianism is nothing more than successful psychopathy (Stellwagen, 2011; Williams, Nathanson, & Paulhus, 2010). Researchers have made efforts to utilize social cognitive tasks to meaningfully distinguish these two constructs (Ali, Amorim, & Chamorro-Premuzic, 2009; Ali & Chamorro-Premuzic, 2010; Jonason & Webster, 2012; Jonason et al., 2012). In the present study, the relationship between psychopathy and Machiavellianism was evaluated in the context of threat perception.

Threat perception is a multifaceted process necessary for successful interpersonal interactions. From a Darwinian evolutionary perspective, sensitive threat perception confers an ability to avoid

danger and is therefore important for species survival. Perception of threat has become operationalized through facial expressions of emotions, often using visual search tasks. For example, attentional bias to and rapid processing of angry faces, compared to happy or neutral faces, is known as the anger superiority affect (Fox & Damjanovic, 2006; Fox et al., 2000; Hansen & Hansen, 1988). The anger superiority affect has practical importance for the detection of threats to physical integrity (e.g., police officers managing crowds; Damjanovic, Pinkham, Clarke, & Phillips, 2014). Beyond the need to assess danger to physical integrity is the perception of social or relational threat. When competing for scarce interpersonal resources (e.g., jobs, romantic partners) in zero-sum situations, individuals need to identify those who pose a threat to their own success. In terms of interpersonal features, smiling has been linked to increased subjective impressions of attractiveness, dominance, and intelligence (Lau, 1982; Quadflieg, Vermeulen, & Rossion, 2013). Moreover, smiling is evidenced to communicate wellbeing (Keltner, 1995), to successfully conceal negative emotions (Keltner & Bonanno, 1997) and has even been investigated in the context of interpersonal manipulation (Ekman, Friesen, & O'Sullivan, 1988). Smiling faces are associated with positive perceptions that could pose a reasonable threat in an interpersonal competition. Moreover, these threat ratings may be further influenced by demographic variables such as gender and age (Boshyan, Zebrowitz, Franklin, McCormick, & Carré, 2013; Neel, Becker, Neuberg, & Kenrick, 2012).

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Described as interpersonally toxic, both psychopathy and Machiavellianism have been associated with global empathy deficits in the perception of emotions from faces (Ali & Chamorro-Premuzic, 2010; Ali et al., 2009; Wai & Tiliopoulos, 2012). In clinical populations, psychopathy has been linked with deficits in the recognition of fear, sadness, and surprise from faces, but not with anger or happiness (Marsh & Blair, 2008). These results have been mirrored in community samples where researchers further found that psychopathy predicted misperceptions of sad faces as displaying positive affect and neutral faces as displaying negative affect (Ali et al., 2009). On the other hand, researchers have argued that empathy deficits associated with Machiavellianism are confounded with alexithymia (Al Ain, Carre, Fantini-Hauwel, Baudouin, & Besche-Richard, 2013; Wastell & Booth, 2003). However, it is unclear whether social cognitive biases in psychopathy and Machiavellianism relate to threat perception.

In the present study, we sought to further clarify whether the emotion processing deficits associated with psychopathy and Machiavellianism extend to the detection of social threat using a hypothetical competition task. Based upon evidence for socio-cognitive deficits in face perception, it is reasonable to expect that Machiavellianism and psychopathy would demonstrate biases in threat perception irrespective of facial affect. Therefore, we hypothesized (1) that threat perception would vary by targets' emotional expressions, (2) that psychopathy and Machiavellianism would be highly correlated, and (3) that psychopathy and Machiavellianism would be related to a bias in threat perception independent of the target's specific emotional expression.

2. Method

As we were interested in studying antisocial personality traits in a relatively normative sample, we recruited 429 community members (55.2% female) from the Toronto metropolitan area to participate in the current study.

2.1. Measures

2.1.1. Machiavellianism

The Mach IV (Christie & Geis, 1970) is a 20-item self-report measure of Machiavellianism in which respondents are asked to indicate along a 5-point scale how much they agree with a series of statements, ranging from 1 "strongly disagree" to 5 "strongly agree." Individual scores are calculated by summing the scores for each item (scale range 20–100).

2.1.2. Psychopathy

The Self-Report Psychopathy Scale III (SRP-III; Paulhus, Neumann, & Hare, 2009) is a 64-item self-report measure of psychopathic traits used in non-clinical populations. Individuals were asked to rate how much they agreed with the 64 statements on a scale ranging from 1 "strongly disagree" to 5 "strongly agree." The scale provides a global score of psychopathy, as well as scores for four subscales: Antisocial Behavior (ASB), Interpersonal Manipulation (IPM), Callous Affect (CA), and Erratic Life Style (ELS).

2.1.3. Threat perception

To measure perceptions of interpersonal threat from faces, we first provided participants with a series of prompts. Specifically, we asked them to imagine that they were competing for a promotion at a large company that would include a substantial pay increase and health benefits. These incentives were included to prime competition through love of money, which is related to both Machiavellianism (Tang & Chen, 2008) and psychopathy (Glenn, Iyer, Graham, Koleva, & Haidt, 2009). Participants were told that

several other individuals were competing for this position and that they would view photos of their competitors. They were asked to measure on a scale from 1 "is incompetent and could be used to my advantage" to 5 "is a threat to me," with a score of 3 as "neutral." Participants were randomly assigned to view 41 faces of undergraduates (27 female, 14 male) affecting one of three emotional expressions in a between-subjects design: neutral ($n = 137$), happiness ($n = 133$), and anger ($n = 159$); all of the photos were taken in the laboratory under the same standardized conditions.¹

3. Results

As tests of normality showed that most of the variables were not normally distributed, we analyzed all of our data by drawing 5000 bootstrapped resamples. ANOVA was used to evaluate our first hypothesis that threat perceptions would be influenced by facial affect. Results showed that there were significant differences between the three affect conditions, $F(2, 426) = 4.08$, $p = .018$, $\eta^2_{\text{partial}} = .019$. Planned comparisons between the conditions showed that smiling (happy) targets ($M = 2.93$, $SD = 0.54$) were viewed as more threatening than those with angry expressions ($M = 2.76$, $SD = 0.62$), bootstrapped 95% CI of difference [0.047, 0.31], and neutral faces ($M = 2.81$, $SD = 0.43$), bootstrapped 95% CI of difference [0.0075, 0.24], though angry and neutral faces did not significantly differ: bootstrapped 95% CI of difference [−0.18, 0.066].

Bivariate correlations were used to test our second hypothesis that psychopathy and Machiavellianism are correlated. Participants' Mach IV scores were significantly correlated with SRP-III total scores and all SRP-III facets (see Table 1). In addition, participant age was negatively related to SRP-III scores, indicating that younger participants had higher levels of psychopathy, whereas older participants were more likely to view participants as more threatening (irrespective of condition). Also, participant gender was significantly related to Machiavellianism and psychopathy; men were more likely to have higher scores in all respects. Lastly, participant gender and psychopathy were significantly associated with threat ratings over all conditions such that women were more likely than men to view faces as threatening. Lastly, increased levels of psychopathy, measured by both the total SRP-III score and the individual facets, were associated with lower threat ratings when condition was not taken into account.

A hierarchical regression was then used to evaluate our third hypothesis that psychopathy and Machiavellianism would be related to decreased threat perception regardless of the targets' emotional expression. Target emotional expression (the between-subjects factor), participant gender, and psychopathy scores were used as predictor variables as they were significantly related to threat perception. Although Machiavellianism was not significantly related to threat perception in the bivariate correlations, we also included it in the final step of the present model-fitting procedure to assure that it was distinguished from psychopathy in predicting perceptions of threat in light of our prior interest in the difference between the two constructs. Data were analyzed using a series of nested regression models.

Participant gender was modeled in the first step and significantly predicted the participants' threat ratings, reflecting the results of the correlation reported above: $F(1, 425) = 10.87$, $p = .0011$, $R^2 = .025$. The between-subjects variable of target emotional expression was then dummy-coded (with the neutral

¹ Following the feedback of an anonymous reviewer, we collected data from a pilot sample using a scale alternatively anchored at 1 "Is not a threat to me" and 5 "Is a threat to me." The average ratings given to the faces were highly correlated between the two scales with all disattenuated correlations greater than .79 across the three conditions.

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