Dimensions of psychopathy in relation to proactive and reactive aggression: Does intelligence matter?

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ABSTRACT

Adolescents with psychopathic traits were previously thought to possess above average intelligence and display enhanced aggression. The current study analyzed the relationship between three dimensions of psychopathy (grandiose-manipulative (GM), callous-unemotional (CU), impulsive-irresponsible (II)), and both proactive aggression (PA) and reactive aggression (RA), and further assessed if these relationships were moderated by verbal-intelligence (VIQ) and performance-intelligence (PIQ). Subjects included 159 adolescents (M = 15.5 years, SD = 1.3, 49% male), recruited from a closed treatment institution. Dimensions of psychopathy were assessed with the Youth Psychopathic traits Inventory, aggression with the Reactive and Proactive aggression Questionnaire and intelligence scores by the Wechsler Intelligence Scale for Children. Regression analysis was performed and results were verified by an alternative, data driven generative discovery analysis. Both CU and II-dimensions were positively related with PA and RA. Adolescents with low VIQ showed stronger positive associations between II and both RA and PA, and less stronger positive association between CU and PA. This was partially consistent with results from the alternative analysis. The present study emphasizes to incorporate verbal-intelligence and sub-dimensions of psychopathy ratings in the understanding and treatment of aggression.

1. Introduction

Adolescents with psychopathic traits often exhibit aggressive behavior, which can further be classified into proactive and reactive aggression. Proactive aggression (PA) is described as planned behavior that does not require provocation or anger and is driven by the anticipation of reward (Dodge & Coie, 1987). Reactive aggression (RA) is described as an impulsive, defensive reaction to frustration or provocation, accompanied by anger and the loss of control (Berkowitz, 1989; Dodge & Coie, 1987). Specific dimensions of psychopathy -Grandiose-Manipulative (GM), Callous-Unemotional (CU), Impulsive-Irresponsible (II)- seem to relate differently to proactive and reactive aggression (Blais, Solodukhin, & Forth, 2014). Both the GM and CU-dimension relate to proactive aggression, while the II-dimension specifically relates to reactive aggression (Barry et al., 2007; Fite, Stoppelbein, & Greening, 2009; Flight & Forth, 2007). However, inconsistent findings have also been reported (Blais et al., 2014). One factor that could account for the different findings is intelligence, as it has frequently been associated with both psychopathy and aggression (Feilhauer, Cima, Korebrits, & Kunert, 2013; Fite et al., 2009; Huesmann, Eron, & Yarmel, 1987). However, intelligence is not accounted for in the majority of studies that tested the relationship between psychopathy and aggression (Blais et al., 2014). Moreover, verbal-intelligence (VIQ) and performance-intelligence (PIQ) may influence the relationship between dimensions of psychopathy and PA and RA differently (Loney, Frick, Ellis, & McCoy, 1998; Salekin, Neumann, Leistico, & Zalot, 2004). Therefore, the aim of the current study was to assess the moderating role of both verbal and performance-intelligence on the relationship between dimensions of psychopathy and proactive and reactive aggression in adolescents with severe conduct problems.

1.1. Psychopathy and aggression

Psychopathy dimensions are related with both PA and RA (Blais...
et al., 2014). PA is intentional, goal directed and can be motivated by external reward, resulting in a disrespect of others feelings and rights, which also characterize the CU-dimension of psychopathy (Flight & Forth, 2007). Further, the GM-dimension represents dominant and self-centered behavior which can be linked to the reward driven proactive aggression (Walsh, Swogger, & Kosson, 2009). RA represents unplanned and less controlled behavior in response to a cue and may therefore be related with the II-dimension. Previous research has demonstrated that both the GM-dimension and the CU-dimension predispose adolescents to proactive aggression (Fite et al., 2009; Vitacco et al., 2009). However, others have shown that either the GM-dimension or the CU-dimension uniquely relate to proactive aggression (Barry et al., 2007; Frick, Cornell, Barry, Bodin, & Dane, 2003; Walsh et al., 2009). As for reactive aggression, a positive relationship between the II-dimension and reactive aggression has been found repeatedly among different populations and settings (Fite et al., 2009; Flight & Forth, 2007). However, some studies have also shown a positive relationship between the GM or the CU-dimension and reactive aggression (Barry et al., 2007; Fant, Frick, & Georgiou, 2009). Due to these inconclusive findings, questions remain whether additional factors may be of influence (Blais et al., 2014). One factor that has frequently been related to both psychopathy and aggression is intelligence (Ttofi et al., 2016; Vitacco, Neumann, & Wodushek, 2007). However, most previous research on the relationship between dimensions of psychopathy and aggression do not account for intelligence, or its sub-forms.

### 1.2. Psychopathy and intelligence

Originally, high intelligence rates were thought to accompany psychopathy as this was presumed to be necessary for manipulative behavior (Hare, Hart, & Harpur, 1991). Indeed, the GM-dimension has shown to be positively related with verbal and non-verbal-intelligence scores (Salekin et al., 2004; Vitacco et al., 2007). The II-dimension on the other hand, appeared to be negatively related to intelligence (Fontaine, Barker, Salekin, & Viding, 2008; Vitacco et al., 2007). Furthermore, findings on the relationship between the CU-dimension and intelligence have shown both positive and negative relationships between CU-traits and overall intelligence or verbal-intelligence (Loney et al., 1998; Salekin et al., 2004). Thus, different sub-dimensions of the psychopathic phenotype relate differentially to verbal, non-verbal or total intelligence.

### 1.3. Intelligence and aggression

Generally, it is suggested that low intelligence rates prospectively predict criminal behavior, especially in combination with low socioeconomic status (Levine, 2011). Yet, it is necessary to elaborate this finding with measures related to crime, to further increase the understanding of antisocial behavior. In this line, a prevailing hypothesis is that youth with low verbal-intelligence show more reactive aggression. It is thought that misunderstandings in peer interactions are less easily repaired due to their difficulties in verbal abilities and, consequently, results in greater frustration and more frequent hostile aggressive acts (Arsenio, Adams, & Gold, 2009; Dodge & Coie, 1987). High intelligence on the other hand, can serve as a protective factor against aggression (Ttofi et al., 2016). Children with high verbal-intelligence in interaction with good self-regulatory competences showed less aggression than children with lower intelligence scores or weaker self-regulatory behavior (Ayduk, Rodriguez, Mischel, Shoda, & Wright, 2007). However, this study did not include performance-intelligence in their analysis. Another study reported an association between verbal-IQ and, reactive aggression and proactive aggression with response inhibition, but no association with performance-IQ (Feilhauer et al., 2011).

### 1.4. Moderating effect of intelligence

Only a relatively small number of studies tested the relationship between dimensions of psychopathy, proactive and reactive aggression, and verbal and performance IQ together. In adult offenders a positive relationship was found between the GM-dimension and the calculated, instrumental use of violence, while there was no moderating effect of intelligence (Walsh, Swogger, & Kosson, 2004). More recently, Allen, Briskman, Humayun, Dadds, and Scott (2013) reported similar findings in an outpatient sample of adolescents displaying various levels of risky antisocial behavior. Although the CU and GM-dimension were positively related with antisocial behavior, none of the dimensions moderated the relationship between both forms of intelligence and antisocial behavior. Additionally, in a detained adult sample, Heinz, Kohler, Godt, Geiger, and Huchzermeier (2011) reported a positive relationship between the GM-dimension, high overall intelligence, and a conviction history related with proactive aggression. Furthermore, they showed a positive relationship between the II-dimension, low intelligence, and a conviction history related with reactive aggression. Finally, in a population of detained adolescents, high CU-traits in combination with high verbal-intelligence, was related with increased violent delinquency (Munoz, Frick, Kimonis, & Aucoin, 2008).

In sum, research indicates that the relationship between psychopathy and aggression could be moderated by intelligence. It also stresses the importance of a sub-dimensional approach for psychopathy and aggression, and for intelligence, as verbal and performance-intelligence has shown to relate differently with psychopathy and aggression (Salekin et al., 2004). Therefore, the aim of the current study was to assess the moderating role of both verbal and performance-intelligence on the relationship between dimensions of psychopathy and proactive and reactive aggression in adolescents with severe conduct problems. It was hypothesized that the GM and the CU-dimension would be predominantly related with proactive aggression, while the II-dimension would be related primarily with reactive aggression. Further, it was hypothesized that verbal-intelligence would positively moderate the relationship between both the GM-dimension and proactive aggression, and the CU-dimension and proactive aggression, while a negative moderation effect of verbal-intelligence on the relationship between the II-dimension and reactive aggression was expected. No hypotheses were formulated for performance-intelligence, as previous research was too sparse to give a clear direction.

### 2. Method

#### 2.1. Participants

Participants were recruited from a closed treatment setting for adolescents with severe conduct problems in Amsterdam. Between 2007 and 2013, 590 adolescents between the ages of 12 and 18 years were admitted to the facility. To ensure participants in this study showed aggressive behavior, only those adolescents form the closed treatment institution that were referred to a group training to reduce aggressive behavior (TACt, Training Aggression Control) were selected for inclusion. The TACt is developed in line with the Washington State Aggression Replacement Training (WSART) and makes use of the social learning theory and aims to reduce aggressive and delinquent behavior by improving social and behavioral skills and moral believes (Glick & Goldstein, 1987). The inclusion resulted in a final sample of 159 adolescents (mean age 15.1 (sd 1.3) years). Almost half (49%) was male, and 37% was of non-Western origin (predominantly Moroccan or Surinamese).

#### 2.2. Procedure

Within the first 6 weeks of admission, diagnostic information was collected as part of the standard procedure in the facility. All
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