



Verbal intelligence and self-regulatory competencies: Joint predictors of boys' aggression [☆]

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Available online 7 July 2006

Abstract

Two studies examined the interactive effect of receptive verbal intelligence measured by the Peabody Picture Vocabulary Test and self-regulatory competencies measured in the delay of gratification paradigm on boys' aggression. Study 1 participants ($N=98$) were middle school, low-income boys primarily ethnic minority. Participants for Study 2 ($N=59$) were drawn from a treatment camp for boys from low-income neighborhoods with behavioral adjustment problems. In both studies, the interaction between verbal intelligence and self-regulation was significant such that verbal intelligence was associated with lower aggression to a greater extent among boys who had effective self-regulatory skills than among those who had ineffective self-regulatory skills. The implications of these findings for interventions and for a theory of risk factors in aggression are discussed.

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Keywords: Verbal intelligence; Self-regulation; Aggression; Resiliency

[☆] This research was supported in part by grants from the National Institute of Mental Health and the William T. Grant Foundation. We thank Geraldine Downey, Stephen Hinshaw, Oliver John, and Rodolfo Mendoza-Denton for their helpful comments on earlier versions of the manuscript.

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1. Introduction

It is a well-established finding in the literature that low intelligence, especially on verbal tests, is associated with higher risk for delinquency and antisocial behaviors (Camp, 1977; Warr-Leeper, Wright, & Mack, 1994; see Hirschi & Hindelang, 1977 for review). For example, poor verbal skills have consistently been associated with the early onset of antisocial behaviors and with their subsequent persistence (White, Moffitt, & Silva, 1989). In longitudinal studies, low verbal intelligence predicts an increase in delinquency even after partialling out the effects of socio-economic status and ethnicity, suggesting that verbal knowledge deficits could play a causal role in the development of delinquency (Lynam, Moffitt, & Stouthamer-Loeber, 1993).

Although extensive research has been conducted on the potential mediators of the verbal intelligence–delinquency link (e.g., Hinshaw, 1992; Moffitt, Gabrielli, Mednick, & Schulsinger, 1981), less research has focused on moderators of this relationship. As several researchers have argued (see Freitas & Downey, 1998, and Luthar, Doernberger, & Zigler, 1993, for reviews), a single mechanism by itself rarely functions exclusively as a unitary protective or risk factor for maladjustment. Instead, it may be of value to consider any one mechanism in the context of other mechanisms, both environmental and intraindividual, and to examine their interactions in understanding personality development (Mischel, 2004).

Therefore, in the current study, we examined the interactive effect of verbal intelligence and self-regulation on boys' aggression. Previous research shows that similar to deficits in verbal skills, deficits in self-regulatory competencies (e.g., impulsivity; inability to delay gratification) are also associated with behavioral maladjustment and externalizing behaviors (e.g., Ayduk et al., 2000; Gottfredson & Hirschi, 1990; Raver, Blackburn, Bancroft, & Torp, 1999). We thus hypothesized that high verbal intelligence would serve as a protective factor against aggression particularly if combined with the availability of effective self-regulatory competencies that help inhibit potentially disadvantageous automatic responses and enable execution of adaptive goal-directed behavior.

Individual differences in self-regulatory competencies were assessed in the classic preschool delay of gratification paradigm (Mischel, Shoda, & Rodriguez, 1989). In this paradigm, children wait by themselves for a delayed reward after they have indicated preference for this reward over an immediately available but smaller, less valuable reward (e.g., one marshmallow now vs. two later). Experimental studies have shown that adaptive, strategic attention deployment in this paradigm plays a causal role in enabling goal-directed delay behavior (see Mischel et al., 1989 for review). Children can delay gratification most effectively when they distract themselves from the rewards while waiting, or when they mentally attend to the abstract, “cool” informational properties of the rewards (e.g., their shape) rather than to their arousing “hot” properties (e.g., their taste). In contrast, delay behavior is significantly hindered if attention is directed toward the rewards or when rewards are mentally represented in terms of their appetitive features (e.g., chewiness of marshmallows). Recent evidence also indicates that effective attention deployment in the delay task at age 4 predicts higher cognitive control in adolescence in standard executive function tasks (Eigsti et al., *in press*).

In prior research, difficulties in executive control have been associated with externalizing problems (Caspi, Henry, McGee, Moffitt, & Silva, 1995; Moffitt & Henry, 1989). By contrast, attentional control buffers children who are high in negative emotionality against

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