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How impulsiveness, trait anger, and extracurricular activities might affect aggression in school children

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ABSTRACT

Individual differences in personality traits such as impulsivity and trait anger as well as environmental variables have an impact on aggressiveness. We tested a model incorporating the related variables of impulsiveness, trait anger, and aggression and incorporated the possible mediating influences of leisure-time activities. Regression analyses of data from 1129 pre-adolescents and 1093 adolescents (55.4% females) from a study evaluating the Spanish version of the Buss and Perry aggression questionnaire (AQ; Santisteban, Alvarado, & Recio, 2007) showed a relation between impulsiveness (Barratt Impulsiveness Scale) and aggression (AQ). Trait anger (Spielberger's State-Trait Anger Expression Inventory), the time spent watching TV and playing video games, and the time spent doing homework (all related to impulsiveness) also are related to physical, as well as verbal aggression (with low to moderate coefficients). Multiple mediation analyses confirm that media violence exposure and homework, respectively, can have aggravating and attenuating effects on self-reported aggression. These results provide key variables for longitudinal studies which could reveal the causal nature of the results found with our cross-sectional design.

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1. Introduction

Despite the considerable amount of evidence accumulating on the effects of media violence on aggressive behavior, controversy on this topic still exists (Anderson & Bushman, 2002a; Kutner & Olson, 2008). The influence of the time spent watching television on aggressive behavior has been widely reported in children, adolescents, and adults (Anderson & Bushman, 2002b; Bartholow et al., 2005; Bushman & Huesmann, 2006; Johnson, Cohen, Smailes, Kasen, & Brook, 2002; Joy, Kimball, & Zabrack, 1986; Santisteban, Alvarado, & Recio, 2007). Another form of entertainment that has acquired wide acceptance among youngsters is playing video games, which has also been related to aggressive behavior (Funk, Baldacci, Pasold, & Baumgardner, 2004; Gentile, Lynch, Linder, & Walsh, 2004; Santisteban et al., 2007). Nevertheless, the scientific community is still debating the influence that TV and video games exert on people's behavior (see, for example, *Kids, TV viewing, and aggressive behavior* (Letters). *Science* 297, July 5, 2002). Those who oppose the influential role of TV and video games on aggressive behavior claim that causality cannot easily be established since violent individuals are more likely to watch aggressive acts on TV and perform them in video games (Olson, 2004). An attempt to reconcile both views is the notion of a bidirectional relationship

between media violence and aggressive behavior, where both causal directions contribute to the associations found.

Aggression can be defined as behavior intended to harm an individual when it is clear that he or she wants to avoid being harmed (Joireman, Anderson, & Strathman, 2003). Apparent aggressive behavior can only be explained by integrating a multitude of factors. For example, the general aggression model (GAM), encompasses three main factors that are active in any social interaction: (1) the individual and situational inputs, (2) the internal states of cognition, emotion, and arousal, and (3) the outcomes of decision processes that lead to either thoughtful or impulsive action (Anderson & Bushman, 2002b). Focusing on personality traits, a recent variant of this model postulates that aggressive behavior is founded on individual differences, such as impulsiveness, sensation seeking, and considering future consequences (Joireman et al., 2003).

The multidimensionality of impulsiveness has resulted in a great variety of behavioral and self-report instruments that, however, often lack significant inter-correlations (Arce & Santisteban, 2006; Wittmann & Paulus, 2008). One definition we shall use here is that impulsiveness is a behavior defined as responding to a stimulus without appropriately evaluating its consequences (Gerbing, Ahadi, & Patton, 1987). In the context of aggression, the lack of impulse control is regarded as one determinant of aggressive behavior (Vigil-Colet & Codorniu-Raga, 2004). As opposed to non-impulsive aggressive acts, which are planned, premeditated, and

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instrumental for social gain and dominance, impulsive aggression is spontaneous, unprovoked, and out of proportion Barratt, Stanford, Dowdy, Liebman, and Kent (1999).

A main characteristic of the GAM model by Joireman and colleagues (2003) is that individual differences in hostility and anger mediate the relationship between personal traits, such as impulsiveness or sensation seeking, and aggression. Thus, only individuals who are anger prone will translate impulsive urges into verbal or physical aggression. In extending this three-part structure of aggressive behavior (impulsiveness → trait anger → aggression) and applying it to pre-adolescents and adolescents, we attempted to include variables that can promote or reduce aggression and are related to activities after school. Environmental factors, such as exposure to violent media, can change the knowledge structure of an individual (perceptual and person schemata, behavioral scripts), produce a desensitization effect in the long run, and lead to more aggressive behavior (Anderson & Bushman, 2002b).

Besides the aggression-promoting influence of virtual violence, effects of aggression reduction through certain mediators are possible. Studies reveal that antisocial behavior and aggression are negatively correlated with academic achievement (Barriga et al., 2002; Williams & McGee, 1994). Aggression has also been related to low reading abilities (Barrera et al., 2002; Davis, Byrd, Arnold, Auinger, & Bocchini, 1999). Impulsive children have poorer selective attention, deficient reading skills, and show more often aggressive social behavior (Thompson, Teare, & Elliott, 1983). Furthermore, it has specifically been shown that impulsiveness scores are negatively related to success at school, e.g., doing well in reading and mathematics tests (Merrell & Tymms, 2001; Vigil Colet & Morales Vives, 2005). Thus, the current literature suggests that the time spent doing homework and leisure reading is associated with lower impulsiveness and aggression. Keeping in mind the bi-directionality of this association, it is possible that pursuing these activities at home could attenuate the effects of impulsiveness on aggression.

In our model depicted in Fig. 1, we assume that, aside from an effect of impulsiveness on aggression, anger-trait will have an influence on aggression. In addition, exposure to media (TV, video games) may aggravate aggression, whereas doing homework and reading books presents an attenuating influence. Impulsivity, on the other hand, might be related to anger as a trait as well as affecting activities done at home. More impulsive individuals will be more likely to watch TV and play video games and be less inclined to do their homework and read books. We were specifically interested in developmental aspects of the discussed relationships (differences

between adolescents and pre-adolescents), as well as in replicating and expanding knowledge of sex differences in the assessed variables, especially in aggression, i.e., that men are more readily involved in physical aggressive behavior than women (Bjorkqvist, 1994; Ramirez, Santisteban, Fujihara, & van Goozen, 2002).

2. Method

2.1. Participants

Participants consisted of 2222 pre-adolescents and adolescents between the ages of 9 and 17 (55.4% females) recruited and tested in 27 schools in the Madrid area. Permission to test the students was sought from the participating schools. The parents were informed by the schools prior to the study and asked whether their children were allowed to participate. Using a stratified sampling method and then randomly selecting school sites, strata were identified according to the criteria of (1) private or state school, (2) location (metropolitan area, dormitory towns, rural environment), (3) size of population at location and school-age population size. For data analyses, children aged between 9 and 11 were considered pre-adolescents ($n = 1129$, 46.1% male, 53.9% female), and those between the ages of 14 and 17 were assigned to the group of adolescents ($n = 1093$, 43% male, 57% female). All participants completed the self-report questionnaires in their classrooms.

2.2. Instruments

After filling out a socio-demographic questionnaire, the participants were asked to indicate the approximate number of hours per day they spent watching television on a weekday and on a weekend day, separately, and how many hours per day they played video games. They also reported the number of hours per day spent doing homework and the number of hours devoted to extra-curricular reading per week.

We used the Spanish version (Recio, Santisteban, & Alvarado, 2004) of the Barratt Impulsiveness Scale (BIS-11) that consists of 30 items that can be grouped into a total score and 3 subscales: Non-planning impulsiveness (“I plan tasks carefully”, “I change jobs”), motor impulsiveness (“I do things without thinking”, “I buy things on impulse”), and attention/cognitive impulsiveness (“I concentrate easily”, “I get easily bored when solving thought problems”) (Patton, Stanford, & Barratt, 1995).

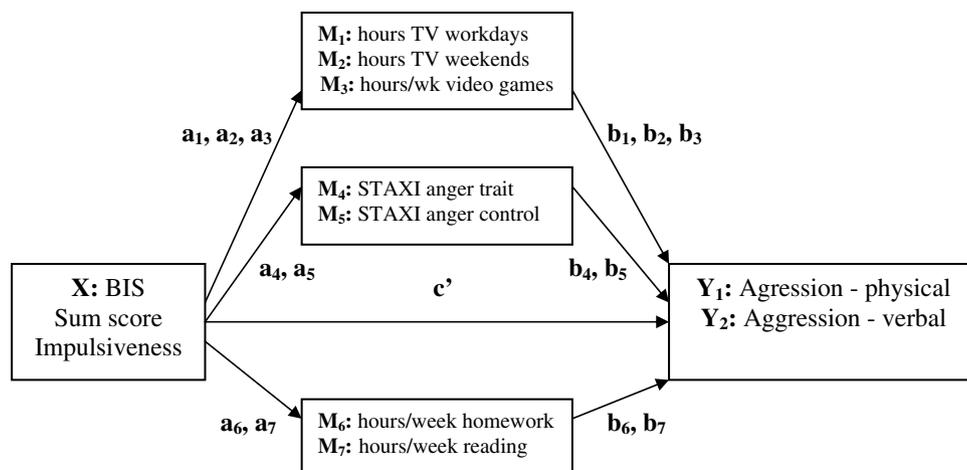


Fig. 1. Positive and negative effects in the relationships between impulsivity and aggression. Possible mediating effects are anger-trait, spending time watching TV, playing video games, doing homework, and reading books. The coefficients $\{a_i\}$ and $\{b_i\}$ are the indirect path coefficients for the effects of X on M and M on Y, respectively. The c' is the direct path coefficient between X and Y.

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