Person × environment interactions on adolescent delinquency: Sensation seeking, peer deviance and parental monitoring

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Abstract

Sensation seeking is a personality trait that is robustly correlated with delinquent behavior in adolescence. The current study tested specific contextual factors hypothesized to facilitate, exacerbate or attenuate this risk factor for adolescent delinquency. Individual differences in sensation seeking, peer deviance, parental monitoring and self-reported delinquent behavior were assessed in a sample of 470 adolescents. Peer deviance partially mediated the effects of sensation seeking and parental monitoring on adolescent delinquency. We also found evidence for a three-way interaction between sensation seeking, peer deviance and parental monitoring, such that the highest rates of delinquency occurred from the concurrence of high sensation seeking, high peer deviance, and low levels of parental monitoring. Results highlight the importance of considering peer- and family-level processes when evaluating personality risk and problematic adolescent behavior.

1. Introduction

Sensation seeking, defined as a disposition to select and prefer novel, stimulating, or exciting experiences, is an intrapersonal risk factor for delinquent behavior (Harden, Quinn, & Tucker-Drob, 2012; Harden & Tucker-Drob, 2011; Popham, Kennison, & Bradley, 2011). Population-average developmental increases in sensation seeking and delinquent behavior co-occur across adolescence (Moffitt, 1993; Steinberg et al., 2008), and individual differences in longitudinal changes in sensation seeking account for much of the adolescent spike in delinquent behavior (Harden et al., 2012). As personality risk for adolescent delinquency, sensation seeking may index a “reaction range” for the emergence of delinquency (Nigg, 2006), with environmental contexts possibly mediating and/or moderating this risk. Researchers have therefore begun to examine specific contextual factors that facilitate, exacerbate or attenuate personality risk for delinquent behavior. In the current paper, we consider the relations between sensation seeking and two social contexts: deviant peers and parental monitoring.

Peer deviance is a robust contextual correlate of adolescents’ delinquent behavior (Kandel, 1986), an association that reflects social selection and social influence (Burk, Vorst, Kerr, & Stattin, 2011; Wills & Cleary, 1999). Social selection is a process by which adolescents with dispositions toward delinquency select (and are selected into) deviant peer groups (Gottfredson & Hirschi, 1990; Kandel, 1978). Social influence occurs when befriending and socializing with deviant peers increases one’s likelihood to engage in delinquent behavior. Sensation seeking may play both mediating and moderating roles in these peer dynamics.

As a mediator, sensation seeking may be a psychological mechanism of social selection, shaping who an adolescent’s friends are. For instance, affiliating with deviant peers may be one way that adolescents high in sensation seeking find a social–ecological niche that is conducive to their motivational and behavioral dispositions. Consistent with this hypothesis, affiliation with deviant peers has been found to mediate the link between sensation seeking and marijuana use (Hampson, Andrews, & Barckley, 2008; Yanovitzky, 2005).

As a moderator, sensation seeking may also play a role in social influence, affecting how an individual responds to peer influence. High sensation seekers may be more responsive to the immediate rewards of peer interaction and approval and thus more vulnerable...
to deviant social influence. Consistent with moderating relations between personality and contextual risk, behavior genetic research has found evidence for gene × peer deviance interaction effects, whereby genetic risks on substance use are exacerbated among adolescents with deviant peers (Harden, Hill, Turkheimer, & Emery, 2008). Although the specific genetic vulnerabilities underlying these effects are unknown, other research has shown that sensation seeking is a heritable personality trait (Koopmans, Boomsma, Heath, & van Doornen, 1995) that partly accounts for heritable variation in adolescent delinquency (Harden et al., 2012). These findings suggest the effects of peer groups on delinquent behavior may be intensified when genetic risk for delinquency—including risk conferred by high sensation-seeking—is present.

Finally, the negative effects of sensation seeking on adolescent delinquency may wane in protective environments. Parental monitoring, defined by Dishion and McMahon (1998, p. 61) as “parenting behaviors involving attention to and tracking of the child’s whereabouts, activities, and adaptations,” is a protective factor that may mitigate the deleterious effects of various risks on adolescent behavior (Hill & Tyson, 2009; Lac & Crano, 2009). From the perspective of social control theory (Hirschi, 1969), antisocial behavior is prevented by bonds to conventional society, including parents. Parental monitoring, by both constraining certain behaviors and by communicating awareness and caring about adolescents’ activities, may function as a key mechanism of social control (Longmore, Manning, & Giordano, 2013). Specifically, parental monitoring may buffer the negative effects of high sensation seeking by preventing adolescents’ affiliation with deviant peers and by limiting the influence of those peers (Kiesner, Poulin, & Dishion, 2010; Steinberg, Fletcher, & Darling, 1994). In a large sample of adolescents, lower levels of peer deviance mediated the protective effect of parental monitoring on alcohol use (Kim & Neff, 2010). Moreover, a study with late adolescents found that the relation between peer influence and drinking behavior was moderated by parental monitoring (Wood, Read, Mitchell, & Brand, 2004). Finally, molecular genetics research has found evidence of a gene × parental monitoring interaction, whereby genetic risks for externalizing behavior decrease under high levels of parental monitoring (Dick et al., 2009, 2011).

1.1. Goals of the current study

Building on previous research, we test five hypotheses in this study. First, high levels of sensation seeking and peer deviance and low levels of parental monitoring will independently predict adolescent delinquency. Second, peer deviance will partially mediate the effect of sensation seeking on delinquent behavior, such that adolescents high in sensation seeking will select deviant peer groups and, in turn, increase risk for delinquency. Third, peer deviance will also moderate the association between sensation seeking and delinquency, such that adolescents high in sensation seeking will be more vulnerable to the influence of deviant peers. Fourth, peer deviance will mediate the protective effect of parental monitoring on delinquent behavior, such that high levels of parental monitoring will prevent adolescents from affiliating with deviant peers and, in turn, prevent exposure to contextual risk for delinquency. Fifth, the protective effects of parental monitoring will be highest for youth high in both intra- and inter-personal risk. Therefore, we hypothesize that parental monitoring will moderate the combined influence that sensation seeking and peer deviance has on delinquency, such that a three-way interaction between sensation seeking, peer deviance and parental monitoring will be observed. Although many of the individual pieces of this model have been tested in previous research, this study is the first to test a comprehensive model that includes a three-way interaction between sensation seeking, peer deviance and parental monitoring.

2. Method

2.1. Participants

Participants were 470 adolescent siblings (identical and fraternal twins?), ages 13–17 years, from the Texas Twin Project (Harden, Tucker-Drob, & Tackett, 2013). Participants were identified from public school rosters and recruited via telephone call and/or mailing to join an on-going twin registry. The sample was 52% male (48% female). The racial composition of the sample was 58% non-Hispanic Caucasian, 21% Hispanic/Latino, 11% African–American, 1% Native American, 2% East Asian, 3.0% Southeast Asian and 4% mixed-race/other. The highest level of education completed by parents ranged from 6th grade to graduate school. Approximately 7% of parents did not complete high school, 7% completed no more than high school, 3% completed a vocational or technical degree, 19% attended college but did not obtain a degree, 6% completed an associate degree, and 58% a bachelor degree or higher.

Participants were assessed in the summer, and they had either been enrolled in high school during the previous school year or were expected to enroll in the fall. Verbal and written consent was obtained from participants, and the study was granted a federal certificate of confidentiality to ensure honest reporting without risk of legal sanction. Parents completed a survey, and adolescents visited the laboratory, during which time they completed a number of computerized tasks and a survey. Trained research assistants administered all tasks; different research assistants assessed each sibling separately.

2.2. Measures

2.2.1. Parental education

Parents reported their highest completed level of education on a 22-point scale, ranging from grade school to a professional or doctorate degree. Ratings for both parents were standardized and then used to calculate a mean score.

2.2.2. Sensation seeking

Individual differences in sensation seeking were measured using the Brief Sensation Seeking Scale (BSSS), which consists of 8 items. For example ‘I would like to explore strange places’ and ‘I prefer friends who are excitingly unpredictable’. Items were rated on a scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Previous research has found that the BSSS shows high reliability and construct validity (Hoyle, Stephenson, Palmgreen, Lorch, & Donohew, 2002; Stephenson, Hoyle, Palmgreen, & Slater, 2003).

2.2.3. Peer deviance

Peer deviance was measured with an 22-item self-report questionnaire adapted from Thornberry, Lizotte, Krohn, Farnworth, and Jang (1994), which asked adolescents how many of their friends engage in various delinquent behaviors, including stealing and destroying property, and prosocial behaviors, such as participating in school activities and getting along with teachers. Items were rated on a scale ranging from 1 (None of them) to 4 (All of them).

5 Although twin samples are often used to conduct behavioral genetic analyses, the focus of the current paper is on the phenotypic associations between study constructs. Accordingly, twin pair resemblance is not used to make inferences about genetic influences. (Standard errors and parameter estimates were statistically corrected for non-independence of observations within twin pairs.)
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