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Trait urgency and substance use decision making in adolescents and young adults: The role of socio-affective factors ☆

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ABSTRACT

The personality trait of urgency has been linked to substance use outcomes. This study examined possible mechanisms underlying this relationship. A total of 187 participants divided into two age groups (adolescents aged 15–17 and young adults aged 18–21) completed measures of urgency and affective associations about substance use. They were then asked to read a hypothetical situation in which a protagonist considers using a 'legal high', and to report their perceived peer approval and perceived positive and negative consequences of such substance use, as well as the likelihood that they would personally use the substance. Multiple-group path analysis was employed to test a model by which urgency influenced the substance use decision via affective associations and perceived peer approval. In adolescents, urgency was significantly related to positive affective associations, and a significant indirect path from urgency to decision via affective associations was found. In young adults, there was a significant path from urgency to decision via peer approval. Results indicate that high urgency individuals may rely on socio-affective information when considering whether to engage in substance use.

1. Introduction

Trait impulsivity, the tendency to act without forethought or inhibition, is reliably associated with the use of alcohol and other substances, predicts initiation of substance use in adolescents, and has been identified as a vulnerability marker for substance use disorder (de Wit, 2009; Lejuez et al., 2010; Verdejo-García, Lawrence, & Clark, 2008). Impulsivity is a multidimensional construct, however, and appears to be the result not of one process but of four distinct 'impulsigenic' sub-traits, or facets: lack of premeditation, lack of perseverance, sensation seeking, and urgency, defined as the tendency to act impulsively in response to strong emotions (Sharma, Markon, & Clark, 2014; Whiteside & Lynam, 2001). These traits are correlated yet separable, such that it is possible, for instance, to be high in urgency yet low in sensation seeking.

Two recent meta-analyses have shown that urgency is the facet of impulsivity most associated with problematic alcohol use in adolescents and adults (Coskunpinar, Dir, & Cyders, 2013; Stautz & Cooper, 2013). Urgency has been linked with cannabis use in adolescents, and with amount of illicit substances tried and prospective increases in illicit substance use in young adults (Kaiser, Milich, Lynam, & Charnigo, 2012; Stautz & Cooper, 2014; Zapolski, Cyders, & Smith, 2009). It is also the aspect of impulsivity that is most predictive of later alcohol and tobacco use in children (Smith, Guller, & Zapolski, 2013).

The psychological mechanisms by which heightened urgency might influence substance use are not clearly understood. This study will investigate two possible mechanisms: a reliance on affective information when engaging in risky decision making, and a tendency to rely on the perceived views of peers. These relationships will be tested in adolescents and young adults, two age groups with an elevated likelihood of substance use initiation and risk-taking (Kandel & Logan, 1984; Willoughby, Good, Adachi, Hamza, & Tavernier, 2013), yet separable in that adolescents seem to be more responsive to socio-affective information, perhaps due to neurodevelopmental immaturity (Somerville, Hare, & Casey, 2011).

1.1. Urgency and the affect heuristic

Urgency appears to reflect individual differences in the capacity to use inhibitory control or to make adaptive decisions under 'hot', emotionally-charged conditions. High urgency individuals may rely on the affect heuristic, defined as the tendency to make decisions based on the emotional representations, or affective

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associations, assigned to those decisions (Slovic, Finucane, Peters, & MacGregor, 2007). Situations involving potential risk, such as substance use, may promote use of the affect heuristic. Loewenstein, Weber, Hsee, and Welch (2001) suggest that when emotional responses to risk are in conflict with cognitive assessment, or 'cold' decision making processes, the emotional response is more likely to drive behaviour. Other authors, using the nomenclature of dual process theories of cognition, have emphasised the importance of 'implicit' processes in substance use, showing that automatic affective responses to substance-related stimuli may guide substance use behaviour more strongly than reflective or 'explicit' cognition (Wiers & Stacy, 2006).

These issues are pertinent to adolescent risk-taking. It has been speculated that urgency is heightened during adolescence compared to adulthood (Cyders & Smith, 2008). Adolescents show elevated emotional reactivity and a reduced capacity to use cognitive control in response to emotional stimuli compared to adults (Arnett, 1999; Somerville et al., 2011). Furthermore, there is growing consensus that emotional and experiential factors may be more reliable predictors of risk behaviour in adolescents than reflective decision making processes (Albert & Steinberg, 2011; Romer, 2010; Slovic, 2003). Adolescents perform poorer than adults on the Iowa Gambling Task (Bechara, Damasio, Damasio, & Anderson, 1994), a measure of affective decision making, tending to make disadvantageous choices influenced by salient emotional information (Crone & van der Molen, 2004). Poor performance on this task has also been shown to be associated with heightened expression of impulsivity-related traits (Billieux, Gay, Rochat, & Van der Linden, 2010; Suhr & Tsanadis, 2007).

Adolescents high in urgency may be prone to use the affect heuristic in substance use decision making. Phillips, Hine, and Marks (2009) found that high urgency adolescents showed a significant link between their affective associations about alcohol use and self-reported binge drinking, whereas amongst their low urgency peers this link was mediated by beliefs about the possible positive and negative outcomes of alcohol use, a measure of deliberative consideration.

1.2. Peers as an affective guide

When considering affective influences on substance use behaviour, the role of peers is vital. Substance use is often initiated in social settings and younger users frequently report social motives for use (Kuntsche, Knibbe, Gmel, & Engels, 2005). The prototype-willingness model, put forward by Gerrard, Gibbons, Houlihan, Stock, and Pomery (2008), posits two paths to adolescent risk behaviour: a reasoned path involving deliberative processing, and a 'social reaction' path that is heuristic and dependent on past experiences. The latter is thought to be responsible for unintended risk-taking such as substance use. Gerrard et al. propose that if adolescents' mental images of prototypical risk-takers are positive they may take on a motivational effect, increasing an individual's willingness to take risks.

Consistent with this model, Romer and Hennessy (2007) found that peer norms regarding tobacco, alcohol, and cannabis were related to affective evaluations of these substances, which in turn were related to actual use in a sample aged 14–22. Peer norms and affective evaluations also mediated the relationship between sensation seeking and substance use, supporting the possibility that these may be mechanisms by which impulsivity-related traits influence substance use.

1.3. Aims and hypotheses

This study aims to test a model whereby urgency is linked to substance use decision making through its relationship with affective associations about substance use and perceived peer approval of substance use, and to compare this model across adolescents and young adults. The study will also test the correlation between affective associations and perceived peer approval for substance use. We predict that affective associations will be a stronger predictor of hypothetical substance use likelihood than perceived positive or negative consequences of use, that affective associations will mediate the association between urgency and substance use likelihood, and that affective associations and perceived peer approval of substance use will be positively associated. We predict that each of these effects will be larger in adolescents than in young adults.

2. Method

2.1. Participants and procedure

Our sample comprised 187 participants (142 female) with an age range of 15–21 (M = 18.29, SD = 1.57), divided into two groups: adolescents and young adults (Table 1). Adolescent participants were students from six schools in the South East London area, UK, visiting Goldsmiths, University of London, for a university 'taster day'. These participants were not offered financial compensation. Individual data on socioeconomic status and ethnicity were not collected as demographic factors were not a focus of the study and previous research has not indicated substantial ethnic variation in relationships between impulsivity and substance use (Flannery, Vazsonyi, Torquati, & Fridrich, 1994; McCarthy, Miller, Smith, & Smith, 2001). Nevertheless, the participating schools all report diverse student bodies, with 39–55% of students identifying as being of Black or minority ethnic heritage. Young adult participants were university students recruited using online notice boards. These participants completed the study using the Qualtrics website (http://www.qualtrics.com) and were offered entry into a £20 prize draw. All participants gave informed consent.

2.2. Measures

2.2.1. Urgency

Urgency was assessed using the positive and negative urgency subscales of the UPPS-P Impulsive Behaviour Scale (Cyders et al., 2007; Whiteside & Lynam, 2001). Cronbach's alpha reliability coefficients in this sample were .88 for negative urgency and .93 for positive urgency. As subscales were highly correlated (r = .64, p < .001) and correlations between the two urgency traits and outcome variables were very similar (all within .07), a combined score was used, as has been demonstrated previously (Smith et al., 2013). Higher scores reflect heightened urgency.

2.2.2. Affective associations

Free associations about substance use and their affective salience were measured using the word association approach detailed by Peters and Slovic (1996). Participants were asked to write down the first five thought or images that immediately came to mind when shown the phrase "using drugs". They then rated each of their thoughts/images on a scale of affective valence ranging from (1) very negative to (5) very positive. The five response scores were

Table 1
Demographic characteristics of samples.

	Adolescents	Young adults
N	71	116
Age range	15–17	18–21
Mean age (SD)	16.65 (.54)	19.32 (1.05)
% female	76	78
Years of formal education	13–14	15–17