



Review

Integrating affect and impulsivity: The role of positive and negative urgency in substance use risk

Gregory T. Smith^{a,*}, Melissa A. Cyders^{b,**}^a Department of Psychology, University of Kentucky, Lexington, KY, USA^b Department of Psychology, Indiana University–Purdue University Indianapolis, Indianapolis, IN, USA

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ABSTRACT

Background: The personality traits of positive and negative urgency refer to the tendencies to act rashly when experiencing unusually positive or negative emotions, respectively.

Methods: The authors review recent empirical work testing urgency theory (Cyders and Smith, 2008a) and consider advances in theory related to these traits.

Results: Empirical findings indicate that (a) the urgency traits are particularly important predictors of the onset of, and increases in, substance use in both children and young adults; (b) they appear to operate in part by biasing psychosocial learning; (c) pubertal onset is associated with increases in negative urgency, which in turn predict increases in adolescent drinking behavior; (d) variation in negative urgency trait levels are associated with variations in the functioning of an identified brain system; and (e) variations in the serotonin transporter gene, known to influence the relevant brain system, relate to variations in the urgency traits.

Conclusion: A recent model (Carver et al., 2008) proposes the urgency traits to be markers of a tendency to respond reflexively to emotion, whether through impulsive action or ill-advised inaction (the latter leading to depressive symptoms); this model has received empirical support. The authors discuss new directions for research on the urgency traits.

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* Corresponding author at: University of Kentucky, 105 Kastle Hall, Lexington, KY 40506, USA.

** Corresponding author at: 402 N. Blackford St., LD 124, Indianapolis, IN 46202, USA.

E-mail addresses: gsmith@email.uky.edu (G.T. Smith), mcyders@iupui.edu (M.A. Cyders).

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1. Introduction

An important advance in understanding the personality underpinnings of impulsive behavior, including substance use, has been the recognition of a personality disposition to act in rash, impulsive ways when highly emotional (Cyders and Smith, 2008a; Whiteside and Lynam, 2001). Researchers have identified two related personality traits, positive and negative urgency, which refer to the disposition to act rashly when experiencing unusually strong positive or negative emotions, respectively (Cyders and Smith, 2008a; Whiteside and Lynam, 2001). (There are, of course, many other personality traits that can also lead to impulsive action [see, for example, Smith and Guller (2014), Wills et al. (2011), and Whiteside and Lynam (2001)]. It is well recognized that intense emotion can be an important precursor to impulsive actions such as drug use. Both very intense positive and negative emotions tend to undermine rational decision making (Bechara, 2004, 2005; Dolan, 2007; Dreisbach, 2006), in part by interfering with one’s orientation toward the pursuit of long-term goals and increasing focus on short-term needs (Dreisbach and Goschke, 2004). Intense positive emotions increase distractibility (Dreisbach and Goschke, 2004) and make one unduly optimistic concerning possible positive outcomes of situations (Nygren et al., 1996; Wright and Bower, 1992). In this context, identification of the traits positive and negative urgency highlight that there are individual differences in the degree to which this occurs. These individual differences have proven to be important predictors of the onset of, and increases in, substance use and other addictive behaviors. Thus, developing a sound theoretical account of the operation of these traits will advance understanding of the risk process.

Cyders and Smith (2008a) presented a theory of urgency that integrated genetic contributors, relevant functional brain systems, early temperament, and development to explain the emergence of individual differences in the urgency traits. In that paper, we reviewed existing empirical evidence concerning urgency, leading to conclusions that (a) positive and negative urgency are characterized by high neuroticism, low conscientiousness, and low agreeableness; (b) the two traits are highly related and can be understood as facets of an overall urgency domain; (c) they can be assessed with good convergent and discriminant validity using multi-trait, multi-method matrices (see Cyders and Smith, 2007); and (d) they share little variance with other impulsivity-related traits, such as lack of planning, lack of perseverance, sensation seeking, reward responsiveness, drive, and fun seeking (also see Cyders et al., 2007). We offered several hypotheses in relation to urgency theory that had yet to be tested. There are three aims to the current paper: first, we examine the degree to which the hypotheses we offered in 2008 have received empirical support. Second, we consider new theoretical advances in understanding urgency and its potentially broader role in psychopathology and substance use risk. Third, we suggest new directions for urgency research. We use the term urgency to refer to the domain that includes both positive and negative urgency. Where necessary, we refer specifically to positive or negative urgency.

2. Empirical tests of urgency theory hypotheses

2.1. The urgency traits are particularly important personality predictors of substance use

Cyders and Smith (2008a) proposed that urgency has a unique and clinically important relationship with many different risk-taking behaviors, including substance use. Numerous studies have compared the relative predictive ability of urgency vis a vis other impulsivity-related traits in accounting for risk-taking and substance use and have supported a unique role for urgency in relation to a wide range of risk-taking behaviors, including problematic alcohol use, risky sexual behavior, illegal drug use, tobacco use, and gambling (e.g., Anestis et al., 2007; Coskunpinar et al., 2013; Cyders and Smith, 2008b; Cyders et al., 2007; Fischer et al., 2003, 2007; Miller et al., 2003; Stautz and Cooper, 2013; Verdejo-García et al., 2007; Zapolski et al., 2009; see also a review by Cyders et al., in press).

Importantly, urgency seems to contribute uniquely to risk specifically for *problematic* levels of risk-taking. For example, whereas sensation seeking relates to the frequency of substance use, negative urgency is a more important factor for problematic levels of alcohol consumption (Fischer et al., 2007). Recent meta-analyses conclude that negative urgency is the strongest impulsivity-related predictor of problematic alcohol consumption (Coskunpinar et al., 2013) and bulimic symptomatology (Fischer et al., 2008). Positive urgency was identified more recently than negative urgency (see Cyders et al., 2007), and, therefore, the literature concerning this trait is still emerging; however, positive urgency has a similar association with alcohol problems (across 5 studies) and alcohol use (across 3 studies) as negative urgency (Coskunpinar et al., 2013). The results of these quantitative reviews appear to confirm the prominent role played by the urgency traits regarding risk for addictive behaviors.

2.2. The urgency traits prospectively predict the onset of, and increases in, substance use and other addictive behaviors

Cyders and Smith (2008a) proposed that urgency would prospectively predict the onset of and increases in substance use and other addictive behaviors. To date, researchers have examined this hypothesis in youth making the transition from elementary school to middle and high school, and also in individuals making the transition to college life. Considering youth first, prospective prediction of the onset of addictive behaviors in children is important for at least two reasons. First, it would suggest that individual differences in urgency are important at the very beginning of one’s substance use history. Second, prediction in children this young is unlikely to be an artifact of prior dysfunction, and thus would highlight more convincingly the possible etiological role of urgency.

This hypothesis has been supported. Positive urgency measured in the spring of 5th grade predicts the subsequent onset of, and increases in, drinking behavior by the spring of 6th grade (Settles et al., 2014) and 5th grade negative urgency predicts the onset of, and increases in, binge eating behavior measured in the spring of 6th grade (Pearson et al., 2012). The overall urgency domain also predicts smoking onset in youth making the transition to middle school (Guller et al., 2015). Most recently, research has spanned

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