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The Desire Thinking Questionnaire: Development and psychometric properties

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ABSTRACT

Desire thinking is a voluntary cognitive process involving verbal and imaginal elaboration of a desired target. Recent research has highlighted the role of desire thinking in the maintenance of addictive, eating and impulse control disorders. The goal of this research project was to develop the first self-report measure of desire thinking. In Study 1 we constructed the Desire Thinking Questionnaire (DTQ) and conducted a preliminary factor analysis which identified two factors. The first factor concerned the perseveration of verbal thoughts about desire-related content and experience and was named 'Verbal Perseveration'. The second factor concerned the tendency to prefigure images about desire-related content and experience and was named 'Imaginal Prefiguration'. In Study 2 we performed a confirmatory factor analysis which provided support for this two factor solution, with both factors achieving adequate internal consistency. Divergent validity was also established through correlation analyses. In Study 3 the temporal stability of the DTQ was examined and confirmed. Finally, in Study 4, the predictive validity of the DTQ in a sample of alcohol abusers was investigated. The DTQ was shown to possess good psychometric properties, as well as divergent and predictive validity. This self-report measure may aid future research into desire thinking and craving, as well as facilitate assessment and case formulation within the context of addictive, eating and impulse control disorders.

1. Introduction

Craving has been conceptualized as a powerful subjective experience that motivates individuals to seek out and achieve a craved target, or practice a craved activity, in order to reach its desired effects (Marlatt, 1987). Research evidence has demonstrated that the experience of craving is qualitatively similar across a range of targets, including alcohol, food, soft drinks and tobacco (e.g. Castellani & Rugle, 1995; Field, Schoenmakers, & Wiers, 2008; May, Andrade, Panabokke, & Kavanagh, 2004; Moreno, Warren, Rodriguez, Fernandez, & Cepeda-Benito, 2009).

A variety of approaches have been put forward for conceptualizing craving. Conditioning models have suggested that craving may be similar to the withdrawal that occurs when the substance that the body has learned to 'expect' is not provided (Ludwig & Wikler, 1974), that it is a conditioned compensatory response designed to offset the effects of a substance (Siegel, 1983), or a conditioned appetitive response similar to that produced by the substance itself (Stewart, Dewit, & Eikelboom, 1984). These models share in common the conceptualization of craving as an epiphenomenon of addictive conditioning processes. Cognitive models, on the other hand, purport that higher order cognitive functioning and information processing configurations are instrumental in activating and exacerbating craving as opposed to craving being an autonomic state or primal drive (Tiffany, 1999). These models have emphasized the role of expectancies (Goldman & Rather, 1993; Marlatt, 1985; Stacy, 1997), propositional networks (Baker, Morse, & Shermann, 1987) and problem-solving aspects of interrupted addictive sequences (Tiffany, 1999) as central to the craving experience.

More recently, in the Elaborated Intrusion (EI) theory of desire (Kavanagh et al., 2004; Kavanagh, Andrade, & May, 2005; Kavanagh, May, & Andrade, 2009; May et al., 2004), it has been suggested that the duration, frequency and intensity of craving, as a primarily affective and subjective response, may be the result of the combination of automatic (conditioned) and voluntary cognitive processes. According to the EI theory a variety of external and internal triggers lead to the activation of automatic associations that contain information about a desired target or activity (e.g. its positive consequences or a felt sense of deprivation). When these associations intrude into awareness they are perceived as spontaneous and induce craving (Bywaters, Andrade, & Turpin, 2004; Witvliet & Vrana, 1995). The escalation and persistence of craving are dependent on the activation of a process of cognitive elaboration termed 'desire thinking' (Green, Rogers, & Elliman, 2000; Kavanagh et al., 2009; Tiffany & Drobes, 1990).

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Desire thinking can be characterized as a voluntary cognitive process involving the elaboration of a desired target at a verbal (repetitive self-talk regarding the need to achieve the desired target and self-motivated statements; Caselli & Spada, 2010) and imaginal (construction of mental images of the desired target or of its context of consumption; Kavanagh et al., 2009) level. This thinking style has also been described as a preference or as a reaction to preference awareness (Zajonc, 1980). The target of desire thinking may be an activity, an object, or a state (Kavanagh et al., 2009; Salkovskis & Reynolds, 1994). Desire thinking also appears to be a transdiagnostic process, with subjective reports indicating that this experience is qualitatively similar across a range of targets, including alcohol, food, soft drinks and tobacco (Caselli & Spada, 2010; May et al., 2004). Finally, desire thinking has important functional aspects. In the short term it helps to manage craving by shifting attention away from this experience and onto the elaboration of the desired target. In the medium to longer term, however, it brings to an escalation of craving as the desired target is perseveratively imagined but not achieved. This, in turn, leads to the desired target being perceived as the only, and increasingly urgent, route to attain relief from escalating distress.

In spite of the literature highlighting the potentially important role of desire thinking in the experience of craving, no self-report measure addressing the voluntary cognitive elaboration of target related contents has been developed. The majority of established craving measures capture: (1) frequency, intensity and duration of perceived urge for the target (e.g. Flannery, Volpicelli, & Pettinati, 1999); (2) beliefs about craving or personal control (e.g. Beck, Wright, Newman, & Liese, 1993); and (3) frequency and intrusiveness of automatic target related thoughts (Bohn, Barton, & Barron, 1996). The purpose of this research is to report four studies on the development of the Desire Thinking Questionnaire (DTQ), a brief self-report measure aimed at assessing both verbal and imaginal components of desire thinking as a voluntary cognitive process. The development of this measure will facilitate further quantitative research investigating the role of desire thinking in craving and provide a first tool to identify individuals with high levels of desire thinking.

2. Study 1: construction of the Desire Thinking Questionnaire

The aim of the first study was to collect pilot data on the factor structure and internal consistency of the DTQ.

2.1. Method

2.1.1. Participants

A convenience sample of 290 individuals (180 female) agreed to take part in the study which was approved by the ethics committee of a London University. For purposes of inclusion participants were required to be at least 18 years of age and be fluent in Italian. The mean age for the total sample, which consisted primarily of Caucasians, was 29.1 years (SD = 8.5) and the age range was 18 to 63 years. The mean duration of school education was 15.5 years (SD = 3.8).

2.1.2. Materials

Items representing desire thinking were derived from the responses obtained in an earlier semi-structured interview study (Caselli & Spada, 2010), from the authors' clinical experience, and from deduction based on the EI theory. A total of 14 items were framed in terms of statements to which participants reported the extent of their agreement on a 4-point Likert-type scale ("Almost never", "Sometimes", "Often", "Almost always"). Examples of these items included: "I imagine myself doing the desired activity" and "I anticipate the sensations I would feel practicing the desired activity". Before completing the questionnaire participants were invited to think about a specific activity for which they usually felt a moderate or high level of desire towards and to indicate it by choosing it from a list of desire target categories that included alcohol beverages, drugs, food, practical hobbies, internet use, physical activity, sexual activity, smoking and shopping.

2.1.3. Procedure

Participants were recruited from e-mail contacts (obtained through a previous study) and through the newsletter subscription at the Department of Psychology of the University of Pavia. Participants who received the e-mail request to visit the online questionnaire study were also asked to forward the address of the study website to individuals in their e-mail address books and ask those individuals to do the same.

When participants first visited the study website, the first webpage explained the purpose of the study: "To develop a questionnaire to assess how people think about a desired activity". Participants were then directed, if consenting to participate in the study, to a second webpage containing basic demographic questions and the questionnaire. Participants indicated their response to the items on the questionnaire by selecting one of a series of "radio buttons". Once the questionnaire was completed participants were again informed that, should they consent to participate in the study, they should click on the "submit" button. Once participants had clicked on "submit", their data was forwarded to a generic postmaster account. This ensured that participants' responses were anonymous. All participants were then debriefed following the completion of the questionnaires. If on clicking "submit", participants had omitted any items from the questionnaire or demographic questions, a window would appear informing the participant of the item they had failed to complete and their data would not be e-mailed. This ensured that only completed data were used for the analysis. A second submission from the same IP address was not allowed so as to avoid multiple submissions from the same participant.

2.2. Results

A principal components method of factor extraction was performed on the scores of the original 14 items. The scree test suggested a two factor solution (eigenvalues of 4.5 and 1.9). We assessed the items as indicators of the latent variables using Promax rotation and adopting a kappa of 4. An oblique rotation was also undertaken in order to assess the correlation between factors. The two factors together accounted for 45.1% of the variance, with an intercorrelation of .39. Items that loaded less than .4 on either factor were discarded, as were items that loaded on both factors. If an item loaded more than .4 on one factor, and failed to load onto the other factor, but was within approximately .2 of the loading on the first factor, it was also discarded. This procedure was followed in order to exclude items that influenced both factors. The revised questionnaire consisted of 10 items with 5 items loading on to each factor. The two factors together accounted for 52.9% of the variance, with an intercorrelation of .31. The factor loadings and communalities of the individual items are presented in Table 1. Finally we repeated the item selection procedure using a Varimax rotation and obtained the same final subset of items. Internal consistencies (homogeneity) were determined by computing Cronbach's alpha. This coefficient was .83 for the total score, .80 for Factor 1 and .81 for Factor 2. Inter-item correlations ranged from .08 to .44 showing that redundancy of items was not problematic.

The final names assigned to each factor were determined by item content. The first factor concerned the perseveration of verbal thoughts about desire-related content and experience and was named 'Verbal Perseveration'. The second factor concerned the tendency to prefigure images about desire-related content and experience and was named 'Imaginal Prefiguration'.