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Moderating effect of emotional intelligence on the role of negative affect in the motivation to drink in alcohol-dependent subjects undergoing protracted withdrawal

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ABSTRACT

In order to understand how emotional aspects evolve and are related to craving for alcohol, different emotion-related variables were examined in relationship to craving during a protracted withdrawal. To this end state affectivity (PANAS), emotional intelligence (EI) (TEIQue), and craving (OCDS) were assessed at the onset (T1: day 1 or 2) and at the end (T2: day 14 to 18) of three-week protracted withdrawal among alcohol-dependent inpatients (DSM-IV, $N = 41$). A significant decrease in craving and negative affectivity (NA) was observed from T1 to T2 while EI scores remained low. At both baseline and follow-up, there was a significant moderation effect of EI on the link between NA and craving for alcohol. Negative mood at the onset of the cure was linked to craving at the end of the withdrawal period but only among patients with low trait EI scores. The merits of using psychotherapeutic approaches were discussed in the treatment of alcohol addiction.

1. Introduction

Alcoholic patients often consume or relapse when exposed to positive or negative emotional life episodes.

A central component for explaining drinking and relapsing in alcohol-dependence syndrome is the subjective experience of "craving". Numerous models of the mechanisms underlying craving have been suggested (i.e., based on conditioning vs. cognitive mechanisms) which all assume that craving is a multifaceted phenomenon that is influenced by a variety of factors (Anton, 1999). The dual-affect model of addiction (Baker, Morse, & Sherman, 1987), proposed that craving is controlled by complex emotion-processing systems that influence physiological responses, self-reports of craving and emotion, and drug-seeking behaviour. The researchers posited that self-reported craving reflects the operation of both a negative and a positive emotional/affective system and that positive- and negative-affect craving are mutually exclusive. Finally, as assessed by observation among nicotine dependent subjects (Zinzer, Baker, Sherman, & Cannon, 1992), the model predicts that negative affect and stress should trigger craving more effectively in drug-deprived than in non-deprived addicts, attesting to the strong moderating effect of withdrawal on the link between negative affect and craving. The explanation for the latter observation is that the activation of the negative-affect craving system in smokers by nicotine withdrawal would inhibit the positive craving system. In a more recent model (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004), the authors suggested that negative reinforcement is the prepotent motive for addictive drug use. That is, addicted individuals take drugs to escape or avoid aversive states such as withdrawal or stress.

Arguments for negative affect as a causal agent in the motivation to drink are derived from studies that showed a covariance between affective disorders (i.e., depression and anxiety) and drinking (Andersohn & Kiefer, 2004). Some other studies observed that the majority of relapse episodes occur during negative affect states (Hartka et al., 1991; Hasin et al., 1996). Given that these studies suggest a relationship between emotions and alcohol motivation, it is important to evaluate whether and how individual differences in emotion-related personality traits moderate the

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effect of emotions on self-reported craving. One such emotion trait is emotional intelligence (EI). EI reflects the ability to adaptively perceive, understand, regulate, and utilize one's emotions and those of others (Salovey & Mayer, 1990; Salovey, Mayer, & Caruso, 2002). Previous studies (Austin, Saklofske, & Egan, 2005; Brackett & Mayer, 2003; Riley & Schutte, 2003) revealed that EI was negatively associated with alcohol consumption both among young adolescents (Trinidad & Johnson, 2002) and adults (Riley & Schutte, 2003).

To our knowledge, EI has never been examined during a withdrawal treatment which is an important initial step of the treatment of alcohol-dependence. During this rehabilitation period depressive symptoms decline dramatically (Andersohn & Kiefer, 2004; de Timary, Luts, Hers, & Luminet, 2008). In addition, a positive association between depressive mood and alcohol-craving has been shown during detoxification (Andersohn & Kiefer, 2004).

This transition period is therefore of interest for studying the relationship between emotion-related personality traits and state-related emotional and motivational dimensions. The first aim of the present study was to evaluate how emotional dimensions such as positive and negative affectivity evolve and are related to craving during a protracted withdrawal and detoxification program among alcohol-dependent patients. A second aim was to test whether emotional competences such as the personality factor EI change during a three-week withdrawal treatment, whether the trait EI is related to craving, and whether it moderates the relationship between affectivity and craving.

2. Methods

2.1. Participants

We tested two groups of participants, a clinical group of 41 patients with a diagnosis of alcohol-dependence as first axis I diagnosis according to DSM-IV criteria (APA, 1994) (clinically evaluated by psychiatrists P.dT., P.dR.) and a control group of 30 alcohol non-abusers. In the clinical group, all patients were recruited during a detoxification and rehabilitation program at the Unité Intégrée d'Hépatologie, Department of Adult Psychiatry at the Cliniques Universitaires St. Luc and at the alcohol-dependence unit of Clinique La Ramée, Brussels. Only the patients that had drunk alcohol on the date of application to the program or the day before were included in the study. Fifty patients were approached but only 41 participated at both times of the testing (i.e., 82% complete participation) (51.2% men; mean age = 50.6 ± 9.4 (SD) years; mean number of years of addiction = 22 ± 15.71). The control subjects (43.3% men, mean age = 49.5 ± 9.2) were recruited from among staff relatives. They did not report any history of alcoholism, and for the most part were only social drinkers. The two groups were equivalent in age, sex and educational level measured by the total number of years of study (See Table 1). The current study was approved by the ethical committee of the hospitals and all patients signed an informed consent form. Data were collected between January and December 2006.

Table 1
Socio-demographic data for the clinical and the control groups.

Variable	Alcoholic groups AT1/AT2 $N = 41$	Control group C $N = 30$	Significance
Mean age, ±SD	50.65 ± 9.43	49.50 ± 9.17	ns
Gender, N (%)			
Male	21 (51.2)	13 (43.3)	ns
Female	20 (48.8)	17 (56.7)	ns
Mean years of addiction, ±SD	22 ± 15.71	–	–
Mean educational level (years), ±SD	13.44 ± 2.96	14.87 ± 3.81	ns

ns = $p > 0.10$.
Abbreviations: ns = not significant.

2.2. Measures

Two state-related dimensions (craving and positive and negative affect state) and the emotion-related personality trait emotional intelligence (EI) were evaluated by questionnaires.

The obsessive–compulsive drinking scale (OCDS) measures the cognitive aspects of alcohol-craving during the preceding 7 days (Anton, Moak, & Latham, 1996). The OCDS is a self-report questionnaire that comprises a total (Tot) of 14 items, which can be divided into two subscales, a 6-item 'obsessive' subscale (Ob) (e.g., *How much of your time where you're not drinking is occupied by ideas, thoughts, impulses, or images related to drinking?*) and an 8-item 'compulsive' subscale (Co) (e.g., *How much of an effort do you make to resist consumption of alcoholic beverages?*). Participants responded to each OCDS item on a Likert scale ranging from 0 to 4. Four compulsive items are related to alcohol consumption (e.g., *How many drinks do you drink each day?*). They are therefore inaccurate indices of compulsion to drink during withdrawal (T2), as consumption is prohibited. These items were thus eliminated and a modified 4-item compulsive subscore (Com) and a modified 10-item total score (Totm) were computed. We used a French version of scale (Ansseau et al., 2000). Good internal consistencies were found for the English validation (Cronbach's alpha: Tot = 0.86; Ob = 0.85; Co = 0.73) (Anton, Moak, & Latham, 1995; Anton et al., 1996) and for the French validation (Cronbach's alpha: Tot = 0.88; Ob = 0.82; Co = 0.79) (Ansseau et al., 2000).

The Positive Affectivity Negative Affectivity Schedule (PANAS) is a 20-item scale which assesses positive and negative mood states (Watson, Clark, & Tellegen, 1988). It consists of 10 positive (e.g., *inspired*) and 10 negative (e.g., *guilty*) adjectives rated along five-point scales raging from 1 (not at all) to 5 (extremely). The PANAS is the most widely used scale for the assessment of current mood states. We used a French translation of the PANAS (Gaudreau, Sanchez, & Blondin, 2006). For each subscale, scores range from 10 to 50 points. Cronbach's coefficients of internal consistency of the PA and NA were adequate in a French (Cronbach's alpha: PA = 0.90; NA = 0.84) (Gaudreau et al., 2006) and an English (Watson et al., 1988) (Cronbach's alpha: PA = 0.90; NA = 0.87) validation.

The Trait Emotional Intelligence Questionnaire (TeiQue-Long Form) consists of 153 items rated on a seven-point scale ranging from 1 (completely disagree) to 7 (completely agree) (Petrides & Furnham, 2003b). It encompasses 15 subscales organized under four factors: well-being, self-control, emotionality and sociability. The study presented in this paper was conducted using a French translation of the TEIQue (Mikolajczak, Luminet, Leroy, & Roy, 2007). Internal consistencies at the factor level are excellent, for both males and females, and this is also the case for the global trait EI whose Cronbach's alpha scores were 0.94 in a French validation (Mikolajczak et al., 2007) and 0.86 in an English validation (Petrides & Furnham, 2003a).

2.3. Statistical analyses

All variables were tested at the onset (T1 = day 1) and end (T2 = day 14 to 18) of the withdrawal period in the same patients. Control participants were only tested once given that no test–retest differences were expected for the measured variables. Student's *t* tests for independent samples were used to compare all variables at T1 and T2 with the scores of controls. For all variables, the evolution between T1 and T2 was tested using paired *t* tests. This