Psychiatry Research 178 (2010) 419–424

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Social anhedonia associated with poor evaluative processing but not with poor cognitive control

Elizabeth A. Martin, John G. Kerns *

Department of Psychological Sciences, University of Missouri, United States

ARTICLE INFO

Article history:
Received 5 January 2009
Received in revised form 27 June 2009
Accepted 27 August 2009

Keywords:
Emotion
Schizotypy
Affective priming
Stroop
Semantic priming

ABSTRACT

Emotion researchers have distinguished between automatic vs. controlled processing of evaluative information. There is suggestive evidence that social anhedonia might be associated with problems in controlled evaluative processing. The current study examined whether college students with elevated social anhedonia would exhibit an increased processing effect on tasks involving either evaluative processing or cognitive control. On an evaluative processing task, affective primes and targets could be either congruent or incongruent and participants judged the valence of targets. On a cognitive control task, participants completed the color-naming Stroop task. Compared to control participants ($n = 47$), people with elevated social anhedonia ($n = 27$) exhibited an increased evaluative processing effect as they were slower and made more errors for incongruent than for congruent trials on the evaluative processing task. In contrast, there were no group differences on the Stroop task or on a semantic priming task. Overall, these results suggest that people with elevated social anhedonia might have problems with some aspects of evaluative processing.

© 2009 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Negative symptoms of schizophrenia are associated with poor outcomes (e.g., Mueser et al., 1991) including poor interpersonal and occupational functioning (e.g., Bellack et al., 1990; Ho et al., 1998). One negative symptom is anhedonia, or diminished experience of positive emotion for social and/or physical stimuli (Horan et al., 2006; Wolf, 2006). Anhedonia is evident in the prodrome of schizophrenia (Hafner and an der Heiden, 2003), and social anhedonia has been found to predict the onset of schizophrenia-spectrum disorders (Kwapil, 1998; Gooding et al., 2005). At the same time, anhedonia is not well treated by existing interventions (Horan et al., 2006). Therefore, understanding social anhedonia could provide evidence about the susceptibility for developing schizophrenia (Lenzenweger, 1999) and could also help in the development of new interventions for a treatment-refractory aspect of the disorder.

Given that anhedonia involves decreased self-reported positive emotion, many psychopathologists have hypothesized that anhedonia might involve an emotional deficit (e.g., Berenbaum et al., 1987; Blanchard et al., 1994; Germans and Kring, 2000; Gooding et al., 2002). However, the exact nature of any emotional deficit in anhedonia is still unclear (Horan et al., 2006). Importantly, emotional functioning involves many different mechanisms, such as perception of emotional information, emotion elicitation, and identification of emotions (Feldman Barrett et al., 2007; Kring and Moran, 2008). At the same time, previous research on emotion in people with schizophrenia and in people at-risk for the disorder suggests that only some aspects of emotion might be impaired (Kring et al., 1999; Gard et al., 2007). Hence, it is possible that anhedonia is associated with problems only in certain aspects of emotional functioning.

Among different mechanisms involved in emotion, researchers have suggested a possible distinction between more automatic activation of evaluative information vs. more controlled processing of evaluative information (Ochsner and Gross, 2005; Barrett et al., 2007; Cunningham and Zelazo, 2007; Johnstone et al., 2007). Automatic evaluative processing refers to an implicit attitude system which is “rapid, unconscious and robust across situations” (Cunningham and Zelazo, 2007, p. 97). In contrast, controlled (or reflective) evaluative processes refer to an explicit attitude system which is “slower, conscious and more likely to generate evaluations that vary as a function of current contexts and processing goals” (Cunningham and Zelazo, 2007, p. 97). For example, automatic evaluative processing might be involved in the initial affective reaction to a stimulus. However, controlled evaluative processing might be involved in regulating or modifying automatically elicited affect, such as decreasing negative affect (Ochsner et al., 2004) or increasing positive affect (Larsen et al., 1996). At the same time, controlled evaluative processing might be involved in explicitly identifying emotions (Barrett et al., 2007), especially in the face of ambivalent feelings about an object (Cunningham et al., 2004; Cunningham et al., 2008). Previous research on automatic vs. controlled evaluative processing has found that they appear to involve activity in different brain regions (e.g., amygdala vs. medial prefrontal; Cunningham et al., 2004; Johnstone et al., 2007),

* Corresponding author. 210 McAlester Hall, Columbia, MO, 65211-2500, United States. Tel.: +1 573 882 6860; fax: +1 573 882 7710.
E-mail address: kernsj@missouri.edu (J.G. Kerns).

0165-1781/$ – see front matter © 2009 Elsevier Ireland Ltd. All rights reserved.
doi:10.1016/j.psychres.2009.08.018

exhibit different time courses (i.e., early vs. late; Cunningham et al., 2005), and are involved in different types of evaluative processing tasks (e.g., unconscious or implicit processing vs. explicit processing, Morris et al., 1998; Cunningham et al., 2004).

One task that involves both automatic and controlled evaluative processing is the primed evaluation task. Similar to the Stroop color-naming task, the primed evaluation task involves both congruent non-interference trials and incongruent high interference trials. On this task (Fazio et al., 1986; Fazio, 2001), participants read a valenced prime word (e.g., 'friendly') and then make an evaluative judgment on a target word (e.g., 'birthday'). When making evaluative judgments, valenced prime words are thought to automatically activate a possible response (e.g., "positive" vs. "negative"). This can produce response facilitation (i.e., faster reaction times (RTs)) if the prime and target are congruent and have the same valence. It can also produce interference (i.e., slower RTs) if the prime and target are incongruent and have different valences. Decreased automatic activation should result in a decreased influence of the prime word on the evaluation of the target (i.e., less difference between congruent and incongruent trials).

In addition to automatic evaluative processing, the primed evaluation task also involves controlled evaluative processing. On this task, the prime (e.g., 'friendly') can interfere and can conflict with the response to the target ('virus'). Hence, just as for incongruent Stroop color-naming trials (e.g., Kerns et al., 2004), the primed evaluation task involves the occurrence of response conflict (Wentura, 2000; De Houwer et al., 2002). Critically, people appear able to engage in relatively controlled evaluative processing in order to counteract interference from the prime, for example, by activating the response that is opposite from the one indicated by the prime. There is evidence that the influence of controlled evaluative processing can occur even at a relatively brief stimulus onset asynchrony (SOA). For example, the response facilitation effect on this task is only clearly evident with a short SOA of 100 ms but not at a slightly longer SOA of 200 ms (Klauer et al., 1997). At even longer SOAs, counteracting the prime results in reverse evaluative processing effects, as participants are actually (i.e., slower when the prime and target are congruent and have the same valence, Klauer et al., 1997; Wentura, 2000; Kerns, 2005). Hence, as in some interference tasks (Machado et al., 2007), on the primed evaluation task with more time between the prime and the target, participants appear to engage in controlled processing to counteract the influence of the prime.

The current study examined the performance of people with elevated social anhedonia on the primed evaluation task to further test whether social anhedonia is associated with diminished automatic or with diminished controlled evaluative processing. The current research focused on people with elevated social anhedonia because previous research has found that they are at increased risk for schizophrenia-spectrum disorders (Kwapil, 1998; Gooding et al., 2005). If people with elevated social anhedonia have diminished automatic evaluative processing, then they should be less influenced by the prime and should exhibit a decreased evaluative processing effect (i.e., performance should be less influenced by whether the prime and target have the same or different valence). In contrast, if people with elevated social anhedonia have impaired controlled evaluative processing, then they should be less likely to attempt to counteract the influence of the prime and should exhibit an increased evaluative processing effect (i.e., increased effect when the prime is incongruent with the target).

If people with elevated social anhedonia exhibit poor controlled evaluative processing on the primed evaluation task, one possibility is that this might be due to poor cognitive control in general. However, previous research has suggested that cognitive and emotional control might be somewhat distinct. For example, they appear to involve distinct regions of the prefrontal cortex (Bush et al., 2000; Ochsner et al., 2004; Zelazo and Cunningham, 2006). Furthermore, there is some evidence that social anhedonia is not associated with poor cognitive control (Kerns, 2006). To examine whether social anhedonia was specifically associated with poor controlled evaluative processing or was generally associated with poor controlled processing, participants in the current study also performed a cognitive control task, the Stroop color-naming task (Stroop, 1935).

In addition to examining evaluative vs. cognitive control, the current research also examined whether performance on the primed evaluation task in social anhedonia might be attributable to semantic processing impairments. On the primed evaluation task, it is possible that a greater influence of the prime on the target could be due to increased semantic spreading activation. Although an effect of semantic priming on the primed evaluation task has not been supported (De Houwer et al., 2002), perhaps such an influence could occur in people with elevated social anhedonia, as some previous research has reported semantic impairments in people at-risk for schizophrenia (e.g., Kerns and Berenbaum, 2000). To examine whether performance by people with elevated social anhedonia could be due to increase semantic priming, participants also completed a semantic priming task (McRae and Boisvert, 1998).

2. Methods

2.1. Participants

Participants were college students attending a large Midwestern public university who received credit for an Introduction to Psychology course for their participation. There were 27 people in the elevated social anhedonia group (14 females, mean age = 18.8, S.D. = 1.2; 26 Caucasian, one African-American) who, following previous research (e.g., Eckblad et al., 1982; Eckblad and Chapman, 1983; L. J. Chapman et al., 1994), scored at least 1.96 S.D. above the same-sex mean on the Social Anhedonia Scale. There were 47 people in the comparison group (30 females, mean age = 18.8, S.D. = 1.1; 43 Caucasian, two African-American, two Asian-American) who scored less than 0.5 S.D. above the mean on Magical Ideation, Perceptual Aberration, and Social Anhedonia Scales. Cut-offs for the Social Anhedonia Scale was obtained from a previous large Midwestern college student sample ($n = 532$, Kerns and Berenbaum, 2000). The two groups did not differ in proportion of female participants, $P > 0.10$. However, given the numerical difference in sex distribution between the two groups, all analyses were conducted using scores that were first standardized within sex.

2.2. Materials

2.2.1. Social Anhedonia Scale

Participants completed the Revised Social Anhedonia Scale (Eckblad et al., 1982), a 40-item true–false questionnaire. Scores on this scale have been found to be strongly associated with other measures of negative schizotypy (Kerns, 2006). In addition, people with elevated social anhedonia have been found to be at increased risk for schizophrenia-spectrum disorders (Kwapil, 1998; Gooding et al., 2005). Participants also completed the Chapman Infrequency Scale (Chapman and Chapman, 1983), which measures careless or invalid responses (e.g., "I cannot remember a time when I talked with someone who wore eyeglasses"). Following previous research (e.g., Chmielewski et al., 1995), participants who endorsed three or more Infrequency Scale items were excluded. No participants were excluded from the Social Anhedonia or comparison groups due to careless/invalid responses on the Chapman Infrequency Scale.

2.2.2. Evaluative processing: Primed evaluation task

This task consisted of positively or negatively valenced prime and target words that appeared in succession on a computer screen. Each prime and target word appeared only once (Klauer et al., 1997). Prime and target words (e.g., positive words: angel, kitten, clothes; negative words: headache, funeral, lice) were selected from previous published norms of affectively valenced words (Anderson, 1968; Silverstein and Dienstbier, 1968; Brown and Ure, 1969; Rubin, 1980; Bellazza et al., 1986; John, 1988; Bargh et al., 1992; Bradley and Lang, 1999). Words in congruent word pairs (i.e., prime and target with the same valence) were matched to words in incongruent word pairs (i.e., prime and target with different valences) on length and frequency. The proportion of prime and target pairs that had the same valence was 0.50. Participants were told to read the first word silently to themselves and then to rate the second word for whether it was a "good" (or "positive") word or a "bad" (or "negative") word. Participants responded with a keyboard press, '1' for good and '2' for bad. After completing 12 practice trials, participants completed 8 blocks of 30 trials each. The 1st, 3rd, 6th, and 8th blocks had a short SOA and the other blocks had a long SOA. Each trial began with a fixation cross for 500 ms, followed by a prime word for either 150 ms (short SOA) or 450 ms (long SOA). Then the target word appeared until a participant made a response. Then the screen was blank for 2000 ms until the next trial. Participants were instructed to respond as quickly and accurately as possible. To insure that participants did not evaluate words in an idiosyncratic manner, participants were given visual feedback when they responded incorrectly. Since very fast or very slow responses are likely spurious (Ratcliff, 1993), trials with RTs less than 200 or greater than 3500 ms were eliminated. Because we used the standard version of the primed evaluation task, which includes only positively and negatively valenced words but does not include neutral prime words (e.g., Bargh et al., 1992; Fazio et al., 1986; Klauer et al., 1997), we could not

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات