



## Impact of rumination versus distraction on anxiety and maladaptive self-beliefs in socially anxious individuals

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### ABSTRACT

A large body of experimental evidence has demonstrated the adverse effects of rumination on depressive mood and cognitions. In contrast, while prominent models of social phobia (Clark & Wells, 1995; Rapee & Heimberg, 1997) have proposed rumination as a key maintaining factor, the effects of rumination in social anxiety have not been extensively explored. In a sample of ( $N = 93$ ) undergraduates, this study investigated the impact of rumination versus distraction following a social-evaluative task on anxiety and another key component of social phobia: maladaptive self-beliefs. Relative to distraction, rumination maintained anxiety in both high and low socially anxious individuals, and maintained unconditional beliefs in high socially anxious individuals. The results support models of social phobia and also suggest important theoretical extensions. Implications for the treatment of social anxiety are discussed.

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Rumination refers to a “mode of responding to distress that involves repetitively and passively focusing on symptoms of distress and on the possible causes and consequences of these symptoms” (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008, p. 400). Rumination is a core process in depression (Nolen-Hoeksema et al., 2008) with the capacity to be both constructive and unconstructive (Watkins, 2008). Outside the domain of depression, rumination has been identified as a key maintaining factor in social phobia (Clark & Wells, 1995; Rapee & Heimberg, 1997; see Brozovich & Heimberg, 2008, for a recent review). Despite this theoretical emphasis, to date, rumination has not been studied extensively in the context of social anxiety. Both conceptual accounts of rumination and experimental approaches used to investigate this thinking style in depression have the potential to helpfully inform investigations in the context of social anxiety.

Experimental studies have shown that depressed individuals who receive a rumination induction report worsened mood, whereas a distraction induction remediates low mood (e.g., Donaldson & Lam, 2004; Nolen-Hoeksema & Morrow, 1993). In addition, individuals with a depressed mood who are instructed to ruminate (versus distract) retrieve more negative memories, recall negative events as having occurred more frequently in their lives (Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998), endorse more

negative, distorted interpretations of events, and indicate negative expectancies of the future (Lyubomirsky & Nolen-Hoeksema, 1995). Recent developments in the depression literature have demonstrated that the core ingredients of this maladaptive mode of rumination are self-focus and abstract, analytical thinking (Watkins, 2004; Watkins & Moulds, 2005).

Thus, while there is a large body of experimental evidence that confirms the adverse effects of rumination on depressive mood and cognitions, the detrimental effects of rumination in social anxiety have not been as extensively explored. This absence is surprising given the emphasis on post-event rumination in prominent theoretical models of social phobia (Clark & Wells, 1995; Rapee & Heimberg, 1997). These models propose that social phobics engage in maladaptive cognitive and behavioural processes that prevent disconfirmation of negative beliefs about the perceived danger in social and performance situations (e.g., “if others really get to know me, they will think I’m a loser”), and thus maintain anxiety. One such cognitive process is the tendency to engage in a post-event review of one’s performance in social situations. This review process has been given different labels: ‘post-event processing’ (Clark & Wells, 1995; Rachman, Grüter-Andrew, & Shafran, 2000), ‘post-mortem’ (Clark & Wells, 1995), ‘retrospective brooding’ (Rapee & Heimberg, 1997) and ‘post-event rumination’ (Abbott & Rapee, 2004). These terms are used interchangeably in the social phobia literature. For the purpose of consistency, hereafter this process will be referred to as rumination.

While Rapee and Heimberg (1997) propose that several processes occur to generate and maintain the anxiety experienced in social interactions, they also note that “these processes are

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similar regardless of whether a social/evaluative situation is actually encountered, is anticipated, or is retrospectively digested (brooded over)" (p.742). Clark and Wells (1995) have made more specific predictions concerning post-event rumination. Their model identified critical processes occurring during social situations that contribute to anxiety maintenance (e.g., self-focused attention, in-situation safety behaviours, anxiety-induced performance deficits), as well as a fourth proposed cognitive process that occurs outside the social situation. When this process occurs before entering a social situation, it is known as *anticipatory processing*; when it occurs following the situation, it is known as *post-event rumination*.

With respect to anticipatory processing, Clark and Wells (1995) propose that prior to entering social situations, social phobics dwell on past social 'failures', generate negative images of themselves in the upcoming situation, and make predictions about poor performance and rejection. In the case of post-event rumination, Clark and Wells predict that following social interactions, social phobics conduct a "post-mortem" (p.74) of the event. This review involves focusing on the anxiety and experience of negative self-perception that occurred during the event, as well as recollections of past instances of social failure. The net effect is that socially phobic individuals come to perceive the interaction as more negative than it actually was, leading to the conclusion that the interaction was another social failure, thus strengthening beliefs about their social inadequacy.

Correlational evidence confirms that socially anxious individuals engage in post-event rumination. Rachman et al. (2000) found that compared to low socially anxious individuals, high socially anxious individuals engaged in significantly more post-event rumination about unsatisfactory social events. Mellings and Alden (2000) observed that socially anxious participants reported more post-event rumination than their non-anxious counterparts following a social interaction task. Similarly, Abbott and Rapee (2004), and Perini, Abbott, and Rapee (2006) found that socially phobic individuals engaged in more negative rumination in the week following a speech task, compared to non-anxious controls. In line with these findings, Kocovski, Endler, Rector, and Flett (2005) reported that in response to negative social scenarios, high socially anxious students were more likely to use ruminative coping strategies and less likely to use distraction coping strategies compared to low socially anxious students. Studies have also quantified the relationship between social anxiety and rumination. Rachman et al. (2000) found a significant positive association between post-event rumination and social anxiety ( $r = .40$ ), which remained after controlling for depression ( $r = .32$ ). Lundh and Sperling (2002) demonstrated that a measure of social phobia was significantly associated with a measure of post-event rumination about negative-evaluational events ( $r = .51$ ).

Despite the correlational link between social anxiety and post-event rumination, only a limited number of studies have experimentally manipulated post-event rumination (see also Brozovich & Heimberg, 2008). For example, Blagden and Craske (1996) administered non-anxious undergraduate students an anxiety induction in which they concentrated on a self-reported anxiety-producing event while they listened to music, followed by either a rumination or distraction task. The anxiety induction initially increased state anxiety for all participants. Subsequently, participants who were allocated to the distraction condition reported significantly reduced anxiety; by comparison, there was no change in anxiety following rumination. Field and Morgan (2004) instructed socially anxious and non-anxious undergraduates to describe a recent ambiguous social event, and then randomly allocated them to either a negative or positive post-event rumination or distraction condition. Participants then recalled and listed several previous social experiences,

and rated their memories in terms of their negativity, shamefulness and degree of associated anxiety. Compared to the non-anxious group, the socially anxious group recalled more negative and shameful memories, regardless of type of post-event rumination. Furthermore, compared to the non-anxious group, the socially anxious group recalled more anxious memories after positive post-event rumination and distraction.

To our knowledge, no further studies have examined the impact of experimentally manipulating post-event rumination. Furthermore, there are several limitations of the existing experimental evidence. First, while the correlational studies confirm that socially anxious individuals ruminate about social situations, their designs prevent both clarification of their causal/temporal association, as well as demonstration of the consequences of rumination. Second, while experimental studies have examined the effects of rumination on state anxiety (Blagden & Craske, 1996) and recalled memories (Field & Morgan, 2004), the studies used participants' self-reported past social events as the content of rumination in the experimental conditions. Third, these experimental studies have not examined the effect of rumination on the other key components of Clark and Wells' (1995) model, such as maladaptive beliefs about the self and perceived danger in social or performance situations. Hence, the impact of rumination on maladaptive cognitions and other key maintaining factors is largely unknown (Rachman et al., 2000). With regards to these maladaptive beliefs, Clark and Wells (1995) proposed three types that are endorsed by socially anxious individuals: (a) excessively high standards for social performance (e.g., "I must be able to convey a favourable impression to everyone"), (b) conditional beliefs concerning social evaluation (e.g., "If people see I'm anxious, they'll think that I'm weak"), and (c) unconditional beliefs about the self (e.g., "People think badly of me"). While these beliefs are theoretically important, no research has examined their relation to post-event rumination. This need to investigate the links between the components of Clark and Wells' (1995) model has been emphasised by the combined cognitive bias hypothesis (Hirsch & Clark, 2004; Hirsch, Clark, & Mathews, 2006), which asserts that individuals with social phobia have many cognitive biases operating and that such biases interact critically to maintain the disorder. Hence, the link between rumination and the other core components of social phobia warrants investigation.

With these limitations in the extant literature in mind, we had three aims. First, we aimed to adapt the experimental manipulations employed to investigate rumination in the depression literature and apply them in the context of social anxiety. Second, given the small body of existing experimental evidence, we aimed to replicate the findings of Blagden and Craske (1996) in high socially anxious participants. As an extension, we investigated the impact of rumination following an anxiety-producing event in the laboratory, rather than relying on recall of a previous event. Third, since no studies to date have experimentally investigated the effect of rumination on any of the other key components of Clark and Wells' (1995) model, we aimed to examine the effect of rumination on maladaptive self-beliefs. Given that this area of research is in its infancy, we investigated the effects of rumination using an analogue research strategy. As social anxiety is considered to be continuously distributed in the general population, an examination of high socially anxious individuals drawn from a non-clinical population allowed us to identify the effects of rumination that are likely to also occur in social phobia (Stopa & Clark, 2001). Previous research has shown that studies that use clinical comparisons (e.g., compare individuals with social phobia and non-anxious controls) and studies that employ analogue comparisons (e.g., compare high versus low socially anxious individuals) yield highly similar findings (see Stopa & Clark, 2001).

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