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Mediators of the relationship between social anxiety and post-event rumination

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Abstract

A variety of cognitive and attentional factors are hypothesised to be associated with post-event rumination, a key construct that has been proposed to contribute to the maintenance of social anxiety disorder (SAD). The present study aimed to explore factors contributing to post-event rumination following delivery of a speech in a clinical population. 121 participants with SAD completed measures of trait social anxiety a week before they undertook a speech task. After the speech, participants answered several questionnaires assessing their state anxiety, self-evaluation of performance, perceived focus of attention and probability and cost of expected negative evaluation. One-week later, participants completed measures of negative rumination experienced over the week. Results showed two pathways leading to post-event rumination: (1) a direct path from trait social anxiety to post-event rumination and (2) indirect paths from trait social anxiety to post-event rumination via its relationships with inappropriate attentional focus and self-evaluation of performance. The results suggest that post event rumination is at least partly predicted by the extent to which socially anxious individuals negatively perceive their own performance and their allocation of attentional resources to this negative self-image. Current findings support the key relationships among cognitive processes proposed by cognitive models.

Keywords: Social Anxiety Disorder, Social Phobia, post-event rumination, cognitive processing, attention focus, self-evaluation of performance.
1. Introduction

Post-event processing refers to a tendency for socially anxious individuals to engage in a repetitive, detailed review of negative aspects of their performance after they encounter anxiety-provoking social situations. This process is seen as a core maintaining factor of the anxiety experienced by people with social anxiety disorder (SAD) by consolidating the individual's negative beliefs about themselves and the social world (Clark & Wells, 1995). According to Clark and Wells (1995), following a social event, a socially anxious individual undertakes a detailed mental rehearsal of that event. The mental rehearsal is dominated by the individual’s anxious feelings and negative self-appraisals that were processed during the event and this enhances the salience of the individual’s negative beliefs. Consequently, the further consolidation of these beliefs contributes to increased anticipatory anxiety, negative affect and negative interpretations of social situations. As a result, the fear of social situations is maintained. The term post-event rumination has also been used for the same phenomenon (Abbott & Rapee, 2004; Edwards, Rapee, & Franklin, 2003).

To date, studies have demonstrated that people with SAD engage in elevated levels of post-event rumination (Abbott & Rapee, 2004; Rachman, Gruter-Andrew, & Shafran, 2000; for a review see Brozovich & Heimberg, 2008). Previous studies have also shown that post-event rumination is associated with more negative self-appraisals of performance and more intense social anxiety (Abbott & Rapee, 2004; Dannahy & Stopa, 2007; Rapee & Abbott, 2007). However, most research on cognitive processes in SAD has examined processes in isolation rather than assessing the interactions among key processes (Hirsch, Mathews, & Clark, 2007). Understanding how post-event processing is related to other aspects of cognitive models of SAD and how it maintains social anxiety awaits further examination (Brozovich & Heimberg, 2008; Kocovski & Rector, 2008).
To date, little is known about how other processes posited by cognitive models (Clark & Wells, 1995; Rapee & Heimberg, 1997) interact with post-event processing to maintain social anxiety. Most research has provided correlational support for specific aspects of the models but an integrative perspective is lacking. To our knowledge, only one study has examined the relationships between cognitive processes in social anxiety disorder from an integrative perspective (Rapee & Abbott, 2007). In this study investigating mediators between characteristic (trait) social anxiety and performance recall in response to a speech, it was found that cognitive processes such as perception of speech performance, perceived negative consequences and negative rumination mediated the relationship between trait social anxiety and performance recall (Rapee & Abbott, 2007). However, this study focused on the factors that impact situational anxiety and associated performance recall a week later; questions remain regarding the factors that contribute to post-event rumination in maintaining social anxiety.

Research investigating predictors of post-event rumination have provided some suggestions to explain how other factors may impact levels of post-event processing. Studies have consistently revealed that the severity of social anxiety and negative self-appraisals of social performance significantly predict post-event rumination in the week following a social performance (Abbott & Rapee, 2004; Kocovski & Rector, 2008; Laposa & Rector, 2011; Perini, Abbott, & Rapee, 2006). Recent studies have attempted to include broader trait-like and task-based cognitive behavioural variables in order to identify potential factors that impact post-event rumination. Laposa and Rector (2011) examined several potential predictors of post-event processing following videotaped exposures during a cognitive behaviour therapy (CBT) program for clinical populations with SAD. In addition to severity of social anxiety prior to treatment, state anxiety during the videotaping, anxious rumination, fear of discomfort to others, and the interpretation of positive social events were positively
and significantly related to post-event processing. Consistent results were obtained by Makkar and Grisham (2011) who investigated post-event processing following both a speech task and a conversation task. After undertaking both tasks, 40 participants completed a series of questionnaires assessing cognitive, behavioural, and physiological processes that occurred during each task. Twenty-four hours later, post-event processing was assessed in response to both tasks. The results showed that higher levels of post-event processing one day later were correlated with higher levels of trait social anxiety, self-reported state anxiety during the task, greater self-focused attention, more frequent negative thoughts during the speech, and lower performance ratings.

Taken together, these studies demonstrated that in addition to trait social anxiety, state anxiety as well as cognitive processes such as self-appraisals of performance, attentional focus, and negative assumptions about self, others or the world during the social task are factors likely to be associated with post-event processing. However, even though these studies demonstrated that individual variables impact post-event processing, an underlying mechanism explaining the inter-relationship between these factors has yet to be explored.

The present study aims to investigate factors contributing to post-event rumination after a speech task in a clinical population of patients with SAD in order to obtain an integrative perspective on the mechanism underlying this key cognitive process. Specifically, in addition to trait social anxiety, we focus on the role of self-focused attention, situational anxiety, perceptions of speech performance, and the probability and cost of expected negative evaluation in relation to post-event rumination and investigate the extent to which these factors contribute to negative rumination. Figure 1 shows our proposed model outlining the relationships between these variables. The direction of the paths was hypothesized based on previous research results and temporal relationships (rumination was measured one week after other variables). Apart from specific correlations between these factors and post-event
processing (Abbott & Rapee, 2004; Kocovski & Rector, 2008; Laposa & Rector, 2011; Makkar & Grisham, 2011), previous studies have also shown several mediation relationships. For example, Perini, Abbott and Rapee (2006) illustrated that perception of performance was a mediator in the relationship between trait social anxiety and post-event rumination. Rapee and Abbott (2007) found that perception of speech performance, perceived focus of attention and perceived negative consequences mediated the relationship between trait social anxiety and state anxiety. In their models, adding a path from inappropriate attentional focus to performance perception demonstrated a better model fit to the data than a model without this path. Furthermore, examination of the indirect paths indicated that inappropriate attentional focus played an important role in predicting state anxiety through performance perception and perceived negative probability and consequences.

Taking these results into account, we hypothesized that (1) trait social anxiety impacts post-event processing directly, (2) trait social anxiety impacts post-event processing through its relationships with inappropriate attentional focus, state anxiety, perception of speech performance, and the probability and cost of negative evaluation. Among these mediators, biased attentional focus was a factor of particular interest. Previous reviews have demonstrated the important role of selective attention in development and maintenance of social anxiety (Bogels & Mansell, 2004; Schultz & Heimberg, 2008; Spurr & Stopa, 2002). In addition, empirical evidence has also supported that biased attention focus (e.g., self-focused attention) can be modified through techniques that focus on redeploying attentional focus (Heeren, Reese, McNally, & Philippot, 2012; Li, Tan, Qian, & Liu, 2008; Schmidt, Richey, Buckner, & Timpano, 2009). Nevertheless, few studies have explored whether and how self-focused attention impacts post-event processing. To our knowledge, only two studies have examined the impact of self-focused attention on post-event processing (Gaydukevych & Kocovski, 2012; Makkar & Grisham, 2011). However, the results were
based on small samples of nonclinical participants. Accordingly, whether and how self-focused attention impacts levels of post-event processing in a clinical population warrants further investigation.

2. Method

2.1. Participants

Participants were 121 individuals with a principal diagnosis of DSM-IV SAD (mean age=34.05 years, SD=12.21; male: 59) who sought assessment and cognitive behavioural treatment at the Centre for Emotional Health, Macquarie University. Diagnostic interviews were conducted by clinical psychologists and graduate students in clinical psychology who were trained to criterion by the clinic director in administration of the Anxiety Disorders Interview Schedule for DSM-IV-TR (Di Nardo, Brown, & Barlow, 1994). Details about the procedure and reliability of the diagnostic interview are available in a previous report (kappa =0.89, see Rapee, Abbott, Baillie, & Gaston, 2007).

2.2. Procedure

The procedure followed that used by Rapee and Abbott (2007). Participants were asked to attend an experimental session during which they were required to give a 3-minute impromptu speech. They were told that the speech task aimed to learn more about their specific anxiety and about social anxiety in general and they would need to describe a topic in front of a video camera and a single experimenter. Participants completed measures of their trait social anxiety and the ADIS-IV interview a week before their speech performance.

Participants chose their own speech topic aside from discussing their participation in the research and were given two minutes to prepare. Before participants started their speech, they completed a series of questionnaires which are not included in this study.

During the speech, participants were briefly encouraged by the experimenter to continue if they stopped in less than 3 minutes but were allowed to terminate if they refused to continue,
at which point, a series of post-speech questionnaires was administered (see below). In response to the speech, participants were asked to answer questionnaires measuring focus of attention, state anxiety, self-evaluation of speech performance, and the probability and consequences of negative evaluation in relation to their speech (see Measures section). At the end of the experimental session, participants were given a sealed envelope containing a negative rumination questionnaire and were asked to complete it a week later following a reminder phone call from a researcher.

Debriefing was not undertaken after the speech task due to the participants’ attendance in a treatment program but was conducted in the context of treatment. The study was approved by the Macquarie University Human Research Ethics Committee.

2.3. Measures

2.3.1. Trait social anxiety

The Social Phobia Scale (SPS) and the Social Interaction Anxiety Scale (SIAS) (Mattick & Clarke, 1998) were used to assess participants’ trait levels of social anxiety. These questionnaires are widely used in studies of social phobia. The SPS was designed to measure the fear of being observed whereas the SIAS provides a measure of fear of social interaction. Both have been shown to have good internal consistency and well-established validity in clinical and nonclinical samples (Mattick & Clarke, 1998). The internal consistency of the SPS and SIAS in the current study were .90 and .85, respectively.

2.3.2. Self-evaluation of speech performance

The Speech Performance Questionnaire (SPQ, Rapee & Lim, 1992) was administered to measure participants’ subjective evaluation of their speech performance. The SPQ comprises 12 specific (e.g., kept eye contact with audience, voice quivered) and 5 global performance items (e.g., appeared nervous, generally spoke well) which allow the participants to rate various aspects of their speech. Each item was appraised on a five-point rating scale with a
total score ranging from 0 to 68, where a higher score indicates a more positive view of one’s performance. Good internal consistency and good inter-rater reliability have been shown in previous studies (Rapee & Hayman, 1996; Rodebaugh & Chambless, 2002). Internal consistency of the SPQ in the current study was .92 (specific and global performance).

2.3.3. Perceived focus of attention

This measure was developed to assess individuals’ beliefs about the types of topics and tasks on which they focused their attention during a speech (Abbott & Rapee, 2006). Factor analysis demonstrated a five-factor solution including attention towards past experiences, attention towards physical symptoms, attention towards negative evaluation, attention towards the task at hand (task-focused attention), and attention towards irrelevant items (distraction). Because we were interested in the impact of biased attention on rumination, a total of the three subscales, i.e., attention towards negative evaluation, attention to past experiences, and attention to physical symptoms was calculated to obtain an overall construct of “inappropriate” attention focus (see Rapee & Abbott, 2007). The psychometric properties of the scale have been shown to be satisfactory (Abbott & Rapee, 2006). The internal consistency for the total of the three subscales from the current sample was .91.

2.3.4. Probability and cost of negative evaluation

This measure was specifically developed to assess the perceived probability and consequences of negative evaluation in the context of a speech task (Rapee & Abbott, 2007). Participants were given instructions that ‘Over the next week, two raters will watch the video of your speech. They will evaluate your performance and provide ratings of your ability.’ It included two sets of questions asking the participants to rate respectively 1) how likely they thought the raters would judge their speech negatively and 2) how bad any negative evaluation would mean for them. A 0-4 rating scale summed across the 14 items indicated the perceived
likelihood and cost of negative evaluation from the raters. Internal consistency of the scale in the current study was .94.

2.3.5. State anxiety

State anxiety was assessed specifically in relation to anxiety experienced during the speech using a 10-item questionnaire specifically developed for this purpose in previous research (Rapee & Abbott, 2007). Participants were instructed to rate each item reflecting anxiety during their speech on a 0 - 4 rating scale. Total scores ranged from 0 to 40 with a higher score indicating greater anxiety. Internal consistency of the scale in this study was .97.

2.3.6. Post-event rumination

The Thoughts Questionnaire (Abbott & Rapee, 2004) was used to assess the tendency of the participants to engage in post-event rumination over the preceding week. Participants answered the questionnaire with an instruction of ‘how often you have thought about various aspects of the session in which you gave your speech last week’ on a 5-point scale ranging from never (0) to very often (4). The scale included 24 items indicating two aspects of rumination (i.e., positive and negative). Only the 14 items of negative rumination (e.g., ‘I looked stupid’, ‘I made a fool of myself’) were used for the current study. Previous studies have shown satisfactory psychometric properties of the scale (Abbott & Rapee, 2004; Perini et al., 2006) and the internal consistency in the current study was .97.

2.4. Statistical analyses

Firstly, bivariate Pearson correlations were calculated between each pair of measures. Secondly, Structural Equation Modelling (SEM) was conducted to examine hypothesised relationships by using the trait social anxiety, perceived focus of attention, state anxiety, self-evaluation of performance and the probability and consequences of negative evaluation as independent variables and negative post-event rumination as the dependent variable. Model testing involved an initial hypothesised model followed by modifications to improve the
overall model fit. The modifications included removing paths with non-significant coefficients to improve model fit. Finally, M plus was used to estimate the significance of indirect paths.

Several widely used goodness of fit indices were used to evaluate the overall fit of the models. Apart from the commonly reported $\chi^2$, which is sensitive to the sample size, we also applied the comparative fit index (CFI) (Bentler, 1990) and the Tucker Lewis Index (TLI) (Tucker & Lewis, 1973). The CFI is considered to be able to estimate model fit even in small samples (Bentler, 1990) and as an incremental fit, the TLI is said to be unbiased in definite samples and is recommended for testing null model (McDonald & Marsh, 1990). According to Hu and Bentler (1999), a cut-off value of .95 or above on either the CFI or the TLI indicates a good fit to the model. In addition, the root mean square error of approximation (RMSEA) (Steiger, 1990) was also examined with its 90% confidence interval (Browne & Cudeck, 1993). Values of .06 or less in RMSEA indicate an acceptable fit (Hu & Bentler, 1999). Model testing was conducted using Analysis of Moment Structures (AMOS) version 19.

3. Results

3.1. Descriptive statistics

Table 1 presents the descriptive statistics for the variables used in this study. As can be seen, all the variables showed reasonable spread.

3.2. Bivariate relationships

Bivariate Pearson correlations were calculated with each indicator utilized in the model to examine the association between variables. As presented in Table 2, all the correlations were statistically significant. Both trait social anxiety and all potential mediators showed moderate to strong correlations with post-event rumination.

3.3. Model testing
Based on the model presented in Figure 1, we initially tested the direct path from trait social anxiety to negative rumination and indirect paths involving inappropriate focus of attention, state anxiety, self-evaluation of performance and the probability and consequences of negative evaluation as the mediators. The model showed a satisfactory fit to the data (see Table 4 Model a). However, as the RMSEA was higher than .06 and several paths were not significant (see Table 3), a second model was run with those non-significant paths excluded (paths between inappropriate attention and post-event rumination, probability and cost of negative evaluation and post-event rumination, probability and cost of negative evaluation to state anxiety, state anxiety and negative rumination, and self-evaluation of speech performance and probability and cost of negative evaluation, see Table 3). As can be seen in Table 4 and Figure 2, the second model (Model b) demonstrated an excellent fit to the data. All individual paths were significant (all \( p's < .006 \)).

M plus testing the indirect paths in the final model found that three paths approached significance as follows: (1) trait social anxiety to negative post-event rumination via self-evaluation of speech performance (\( \beta = .11, z = 1.79, p = .07 \)). (2) trait social anxiety to negative post-event rumination via inappropriate attentional focus, self-evaluation of speech performance (\( \beta = .10, z = 1.75, p = .08 \)). (3) inappropriate attentional focus to rumination via self-evaluation of speech performance (\( \beta = .14, z = 1.79, p = .07 \)). All remaining indirect paths in the model were not significant.

In summary, the results showed that trait social anxiety directly predicted rumination in response to delivery of a videotaped impromptu speech and also through its relationships with individuals’ perceived attentional focus and their perception of speech performance. Inappropriate attentional focus was strongly affected by trait social anxiety, which in turn impacted perception of performance, probability and consequences of negative evaluation, and state anxiety. However, neither inappropriate attentional focus nor probability and
consequences of negative evaluation directly predicted negative rumination a week after the speech. Additionally, the prediction of state anxiety on negative post-event processing was weak and non-significant.

4. Discussion

The aim of this study was to examine factors influencing negative post-event rumination in response to a speech task in clinical participants with SAD. Based on the results from previous studies, we included factors such as state anxiety, self-evaluation of performance, the probability and cost of negative evaluation, and perceived focus of attention as potential cognitive and affective factors that mediated the relationship between degree of social anxiousness and engagement in post-event rumination. We expected to obtain an integrative perspective on the underlying mechanisms that may explain the inter-relationship between these factors and negative post-event rumination.

As predicted, significant correlations were observed between negative post-event rumination and trait social anxiety, perceived inappropriate focus of attention, state anxiety, self-evaluation of performance and perceived probability and consequences of negative evaluation, indicating that all factors are associated with post-event rumination. This result further supports previous studies that have demonstrated relationships between negative rumination and trait social anxiety, attention focus, state anxiety, self-evaluation of performance, and the probability and consequences of negative evaluation and suggested the possibility of these factors as potential predictors of post-event rumination (Abbott & Rapee, 2004; Laposa & Rector, 2011; Makkar & Grisham, 2011; Perini, et al., 2006).

After statistically controlling for the influence of these cognitive and affective variables, trait social anxiety accounted for significant, unique variance in post-event rumination. This result echoes previous studies showing that individuals with high levels of trait social anxiety ruminate negatively after an anxiety-provoking situation (Abbott & Rapee, 2004; Kocovski &
Rector, 2008; Makkar & Grisham, 2011; Rachman, et al., 2000). The existence of the direct relationship indicates that factors that were not assessed in the current study partially mediate this relationship. Thus, future exploratory research might be used to identify additional factors that are relevant to the extent of rumination among socially anxious individuals following a social stressor.

In addition to the direct path from trait social anxiety to post-event rumination, two possible indirect pathways linking social anxiety to post-event rumination via focus of attention and self-evaluation of performance were also identified. A path from trait social anxiety to negative post-event rumination via perception of performance and a path from trait social anxiety to negative post-event rumination via inappropriate attentional focus and perception of performance were found at a trend level of significance. These results suggest that trait social anxiety may impact post-event rumination through its relationships with individuals’ perceived attentional focus and their self-evaluation of speech performance. In both of the indirect paths, self-evaluation of performance served as a key factor. In fact, an additional analysis on indirect paths from trait social anxiety to negative post-event rumination via self-evaluation of performance revealed that the sum of indirect effects was significant ($\beta=0.27$, $z = 3.38$, $p =.001$). This highlighted the contribution of self-evaluation of performance to the ultimate expression of negative post-event rumination. Several previous studies have shown the important role that self-appraisals of performance play in eliciting post-event rumination (Abbott & Rapee, 2004; Perini, et al., 2006). Consistent with the present results, perception of performance has been shown to be a mediator in the relationship between trait social anxiety and post-event rumination (Perini, et al., 2006). The current results extend these earlier findings by identifying an alternate path from trait social anxiety to focused attention which impacts self-perception of performance and leads to post-event rumination.
Previous work has also suggested that focus of attention is a predictor of post-event processing (Makkar & Grisham, 2011). However, in the present study, even though focus of attention was significantly correlated with post-event processing, it no longer significantly predicted post-event processing after other predictors were included in the analyses. Rather, inappropriate attention was shown to mediate the relationship between trait social anxiety and self-evaluation of performance and in this way, indirectly impacted negative post-event rumination. These results are consistent with cognitive models of social phobia (Clark & Wells, 1995; Rapee & Heimberg, 1997). As proposed by Clark & Wells, once socially anxious individuals enter an anxiety-provoking social situation, they tend to focus their attention on internal negative thoughts and feelings. This contributes to the formation of a moment-by-moment negative representation of self and performance. Following the social event, socially anxious individuals repeatedly retrieve this negative information about themselves and their performance in the social situation. Our results provide empirical support for the proposed mechanisms underlying key cognitive processes in the model, suggesting that biased attention and self-appraisals of performance play key roles in activating and maintaining negative post-event rumination.

Consistent with previous studies (Bogels & Lamers, 2002; Rapee & Abbott, 2007; Woody & Rodriguez, 2000), we found that the extent to which socially anxious individuals focused their attention towards “inappropriate” cues affected self-appraisal of performance, situational anxiety and the probability and consequences of negative evaluation. However, contrary to our expectations, even though state anxiety and probability and consequences of negative evaluation showed moderate to strong bivariate correlations with post-event rumination, they failed to predict post-event rumination in the final model. Previous research examining the unique prediction of post-event rumination from state anxiety has shown inconsistent results. In a series of studies by Rector and colleagues (Kocovski & Rector,
state anxiety measured by the Subjective Units of Distress Scale was found to be a significant predictor of post-event rumination following anxiety provoking tasks in SAD patients who attended group cognitive behaviour therapy. In these studies, when state anxiety was entered with other factors including SIAS scores as a measure of trait social anxiety in the regression analyses, the SIAS was no longer significant. Instead, state anxiety became a unique predictor of post event processing over and above pre-treatment social anxiety (SIAS). Another study using a clinical sample found that post-event processing was not significantly correlated with trait social anxiety measured by SPS and SIAS but was significantly associated with state anxiety and depression (McEvoy & Kingsep, 2006). Furthermore, state anxiety was the only significant predictor of post-event processing after controlling for depression and general anxiety (McEvoy & Kingsep, 2006). However, Makkar and Grisham (2011) demonstrated a different result. In their study, predictors of post-event processing such as trait social anxiety (i.e., fear of negative evaluation, SIAS, SPS) and other within-situation variables (i.e., state anxiety, performance appraisals, safety behaviours, self-focused attention and negative assumptions of self and social evaluation) were examined in a non-clinical sample. The finding revealed that when within-task measures were included in the regression model, trait social anxiety was no longer a significant predictor. However, among those within-situation variables, state anxiety did not serve as a unique predictor of post-event processing after a speech task. Instead, negative assumptions about social evaluation (a construct akin to the probability and consequences of negative evaluation in our study) uniquely predicted post-event rumination over and above other within-situation factors, which we did not replicate. The inconsistency may be due to different variables included or controlled in the analyses and diverse instruments used to assess state anxiety (e.g., using subjective unit of disturbance) and trait social anxiety (e.g., both SIAS and SPS, or SIAS only). Further, the population (clinical vs. non-clinical) recruited to the studies and timing of
assessments (e.g., before the task or after the task) may also be responsible for the divergent findings.

Findings of this study are tempered by several limitations. First, the study relied on self report measures and assessed only a few of the potentially important variables that may predict post-event rumination. Other variables proposed by cognitive models such as anticipatory processes and safety behaviours should be included in future research. Second, as perceived attentional focus, self-evaluation of performance, state anxiety and the probability and consequences of negative evaluation were assessed at the same time, this cross-sectional component of the design restricted the ability to clarify possible causal relationships among these variables. Third, the current results are based entirely on a speech as the social threat. Even though public speaking is a core fear in SAD and has been commonly used to assess social fears, evidence has shown that differences between social situations may impact post-event rumination (Fehm, Schneider, & Hoyer, 2007). Therefore, future research will need to apply the results to other social situations to obtain a more general evaluation of the relationships between variables.

In summary, the current results demonstrated two pathways leading to negative post-event rumination among people with SAD following a social stressor: 1) a direct path from trait social anxiety to post-event rumination and 2) indirect paths from trait social anxiety to post-event rumination via its relationship with inappropriate attentional focus and negative self-evaluations of performance. Our unique contribution lies in providing empirical support for the relationships and interactions between the cognitive processes proposed to maintain negative rumination by cognitive models of social anxiety. Our findings support specific roles for negative appraisals of performance and inappropriate attentional focus in driving post-event rumination. Modifying performance appraisals and redirecting attention from anxious thoughts and feelings for people with social phobia remains a clinical challenge. The
impact of cognitive (and meta-cognitive) therapy and attention training techniques (including attention modification programmes; Amir, Weber, Beard, Bomyea, & Taylor, 2008) in reducing negative rumination awaits assessment. In keeping with cognitive models, we hypothesise that significantly impacting these specific cognitive and affective processes should reduce levels of rumination for people with social phobia.

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