Is post-event processing specific for social anxiety?

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Abstract

In their model of social phobia, Clark and Wells [1995. A cognitive model of social phobia. In R. G. Heimberg, M. Liebowitz, D. A. Hope & F. Schneier (Eds.), Social phobia: Diagnosis, assessment, and treatment (pp. 69–93). New York, London: The Guilford Press] introduced a process called “post-event processing” (PEP), which is characterized by prolonged rumination about past social situations. The present study examined to what extent PEP is specific for (a) social anxiety or (b) social situations. In a cross-sectional study, 217 participants reported about a social and a phobic event followed by negative thinking. PEP as well as its potential predictors such as social anxiety, general anxiety, and depression were measured by questionnaires. Results showed that social events were followed more often and by more intense PEP. Further confirming specificity, the fear of negative evaluation as an aspect of social anxiety was significantly associated with PEP for social but not for phobic situations, and vice versa; general anxiety predicted PEP only after phobic but not after social situations. Furthermore, PEP was elevated particularly for interaction (as opposed to performance) situations, indicating that the ambiguity of the situation may be an important predictor for prolonged processing.

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1. Introduction

Social phobia is one of the most frequent anxiety disorders, and subthreshold expressions of social anxiety are a part of many individuals’ lives (Fehm, Pélissolo, Furmark, & Wittchen, 2005; Wittchen & Fehm, 2003). Innovative models explaining the development and maintenance of the disorder have been proposed, some of which favor a cognitive view, namely those by Rapee and Heimberg (1997) and Clark and Wells (1995). Whereas processes within the situation are similarly delineated in both models, only the model by Clark and Wells explicitly postulates biased cognitive processes before as well as after the situation. The latter has been named “post-event processing” (PEP) or “post-mortem thinking” (Clark & Wells, 1995, p. 85). PEP includes repetitive, detailed reviews of the situation and an increased focus on the negative aspects of the situation. Negative self-perceptions and recollections of unfavorable aspects of the situation are likely to occur more and more frequently, as well as recollections of similar situations that are perceived as a failure. These processes may be so strong that a situation originally judged as satisfactory might be evaluated as a complete flop later on. In recent works, the term post-event rumination has been introduced (Abbott & Rapee, 2004; Edwards, Rapee, & Franklin, 2003), but as PEP also includes cognitive processes other than rumination (e.g., biased memory retrieval) we will adhere to the term “post-event processing” in this article.

Post-event processes are of particular interest for the cognitive view of social phobia as they might contribute to the explanation why people with social anxiety do not experience a reduction of anxiety during repeated exposure to social situations, although they are part of everyday life. As the actual course of a situation is replaced by an increasingly distorted view of this situation, any corrective information will be less influential in comparison with the negative information subjectively fitting well with the person’s negative self-image. Furthermore, PEP may partially account for anticipatory anxiety, which occurs often and intensely in advance of social situations. In spite of the prominent role that retrospective negative evaluations of the self in social situations may have for the understanding of the development and maintenance of social anxiety, systematic research on PEP only begins to emerge.

Studies empirically addressing PEP demonstrated that PEP can be measured with high internal consistency (Edwards et al., 2003; Lundh & Sperling, 2002; Rachman, Grüter-Andrew, & Shafran, 2000), high stability (Lundh & Sperling, 2002), and high factorial validity (Rachman et al., 2000) when questionnaire measures are used. Especially the relation between social anxiety and PEP has been explored. In several studies, significantly higher levels of PEP for high compared to low socially anxious individuals have been reported (Edwards et al., 2003; Mellings & Alden, 2000; Rachman et al., 2000). Similar results were found among patients with social phobia (Abbott & Rapee, 2004). Scores for social anxiety and PEP were significantly positively correlated ($r = .40$ in Rachman et al., 2000; $0.45 < r < 0.66$ for different measures of social anxiety in Edwards et al., 2003). Note that Rachman and colleagues instructed their participants to remember “a social situation … during the past few months” (Rachman et al., 2000, p. 613) but did not control whether those recollections were definitely characterized by negative evaluation or rather by other negative emotions in social situations such as guilt or anger. According to Lundh and Sperling (2002), a number of emotions other than evaluative anxiety are prompted by social situations, which could explain the smaller correlations than those found by Edwards et al. (2003).
The relation between social anxiety and PEP was found to remain significant even after the effects of depression were controlled for (Edwards et al., 2003; Rachman et al., 2000). Thus, PEP after social situations can be differentiated from depressive ruminative thinking.

In three studies, the course of post-event processes has been investigated with a quasi-experimental longitudinal design. Mellings and Alden (2000) assessed ruminative thinking directly after an interaction situation as well as 1 day later. Higher levels of PEP were significantly associated with a better recall of negative self-related information and a stronger negative bias in self-judgments. Note, however, that the significant relation disappeared when the bias score for the first date (the day of the interaction) was entered as a control variable. This indicates that these variables and the associations among them were merely a consequence of social phobic bias. Lundh and Sperling (2002) asked 62 students to monitor situations eliciting social anxiety over a 1-week period in a diary. They found even higher associations between PEP scores and social anxiety ($r = .56$ at the day of the distressing event, $r = .38$ for the next day), although this significant association emerged only for situations of a negative-evaluational character but not for social situations followed by feelings of guilt or anger. Edwards et al. (2003) selected high and low socially anxious students on the basis of a prior screening, and participants had to deliver an impromptu speech. One week later, the frequencies of negative as well as positive thoughts about the speech were assessed. High socially anxious individuals had significantly higher levels of negative thoughts about the situation but did not differ from low socially anxious individuals with regard to positive thoughts. However, negative evaluation was not assessed directly after the speech. Consequently, whether participants gained a more negative attitude towards their performance during that week or only maintained their negative attitude remains unclear.

In the only clinical study, patients with social phobia were invited to deliver an impromptu speech, and, among other variables, the level of post-event rumination 1 week later was assessed (Abbott & Rapee, 2004). PEP was significantly related to a more negative rating of the performance during the speech. When possible predictors for negative PEP were examined with a regression analysis, social anxiety and the self-rated speech performance emerged as significant predictors, whereas age, gender, and depression did not explain significant portions of variance. After a cognitive-behavioral treatment (mean pre-post interval: 12 weeks), participants showed significant reductions in their degree of negative post-event ruminations, although the patients’ scores were still higher than those of non-patient samples.

Summarizing, Rachman et al.’s (2000) question whether PEP occurs can clearly be answered positively and can be supported by empirical data. There is also strong evidence that higher levels of social anxiety are associated with higher levels of PEP. The latter is associated with stronger judgmental biases against a socially threatening situation, but the causal relation of these processes is unclear. Furthermore, PEP can be significantly reduced by a cognitive-behavioral therapy. But, apart from the functional role within Clark and Wells’ model, it remains unclear to what extent the psychopathological processes are exclusive for social anxiety: the specificity of the process has still to be established. Are other anxiety-provoking situations followed by similar cognitive processes, or is PEP specifically linked to social situations? Do highly anxious persons fearing situations other than social ones experience comparable processes? Which factors determine the degree of negative PEP after social and other situations?
These questions were addressed in the present study. To examine specificity, a comparable but non-social situation had to be identified in which PEP seemed also plausible and which shared at least some important features with social situations. This was the major aim of a pilot study, whereas specificity was directly addressed in the main study.

2. Pilot study: comparison situation

We conducted a pilot study with the aim of identifying a situation with the following characteristics:

(a) anxiety as central and main emotion;
(b) no involvement of evaluation anxiety and
(c) emotional intensity, personal relevance and frequency being comparable to social situations.

2.1. Methods

Three classes of situations meeting these criteria were selected: phobic situations (e.g., “fear of heights”), humiliating situations (e.g., “Someone spoke derogatory about me in my presence.”), and unfair situations (e.g., “I had lower test scores than others while showing comparable performance.”). Additionally, a category for social events was included. For each of the four categories, two examples were presented to illustrate the content of the category. Participants were instructed to recall one situation for each category that had occurred during the past 6 months and had been followed by prolonged thinking. Participants could either choose one of the examples as their reference or write down an own example that they referred to.

For each situation, five questions had to be answered: (1) “How frequently did those situations occur during the last six months?,” (2) “Did you ruminate about the situation, or did you have frequent memories of it?,” (3) “How relevant was the situation for you?,” (4) “Did you have unpleasant feelings in the situation?,” (5) “Were you afraid of being negatively evaluated by others in the situation?” Answers had to be given by ticking the appropriate category. Five response categories were provided for Question 1 (0 = rarely, 1 = once in several months, 2 = once a month, 3 = several times a month, 4 = several times a week), and four were provided for all other items (e.g., Question 4: 0 = not at all, 1 = somewhat, 2 = rather strong, 3 = very strong).

Forty-one students (20 female, 21 male) with a mean age of 22 years (M = 22.3, SD = 3.6, range 19–40) were approached in the cafeteria of the campus and agreed to participate in the study. Their participation was voluntary, and they did not receive any compensation for it.

2.2. Results

Humiliating situations were accompanied by a high amount of fear of negative evaluation and were thus ruled out as a comparison category (humiliating situations: M = 1.6, SD = 1.0; unfair situations: M = 0.9, SD = 1.0; phobic situations: M = 0.3, SD = 0.8; social situations: M = 1.5, SD = 1.0). In a second step, we examined the
characteristics of unfair and phobic situations. Phobic situations were experienced more frequently by the participants ($M = 1.5$, $SD = 1.5$; unfair situations: $M = 0.8$, $SD = 1.0$; social situations: $M = 1.2$, $SD = 1.2$), and they occurred more often during the past 6 months. The specific situations described by the participants were rather heterogeneous for the category of unfair events. Consequently, situations associated with phobic anxiety were selected as suitable comparisons with social situations for the study’s purpose.

3. Main study: specificity of PEP

The second study aimed at inspecting the specificity of PEP for social situations and social anxiety. If PEP was specific for social anxiety within a narrow definition, it should occur exclusively after social situations, and social anxiety should be the only predictor for it. But this strong formulation seems unrealistic. Thus, a more appropriate definition of specificity of PEP within the setting of the present study would include:

1. Social situations elicit higher amounts of PEP than do phobic situations.
2. Social situations are followed by PEP more often than phobic ones.
3. Social anxiety is a strong predictor for PEP after social situations but not after phobic situations.

3.1. Methods

The survey consisted of three different parts. A general section that was placed in the middle of the total questionnaire contained a screening for general anxiety and depression. The first and third sections assessed PEP after a social event as well as after a phobic event. These sections included a questionnaire for PEP as well as questionnaires for social and phobic anxiety, respectively. The section assessing PEP started with questionnaires for social anxiety and phobic anxiety, respectively.

3.1.1. Questionnaires

3.1.1.1. General anxiety and depression. As a measure of anxiety and depression we chose the German version of the Hospital Anxiety and Depression Scale (German: Herrmann, Buss, & Snaith, 1995; HADS; Zigmond & Snaith, 1983). It is a highly economic and widely accepted screening measure comprising the subscales anxiety and depression, each consisting of seven statements to be rated on a 4-point scale.

3.1.1.2. Social fears. We used the Fear of Negative Evaluation scale (German: Vormbrock & Neuser, 1983; FNE; Watson & Friend, 1969) as a measure of social anxiety. It contains 20 items that have to be answered on a 4-point scale. The scale is highly reliable and sufficiently valid (Rodebaugh et al., 2004; Watson & Friend, 1969).

3.1.1.3. Phobic fears. To assess anxiety related to possible objects of specific phobia, we decided to develop a questionnaire specifically fitting the purposes of our study. A main reason for this was the length of pre-existing measures, e.g., the Fear Survey Schedule (72 items) or either the specific focus of others, relating to only one possible object (e.g. spiders, claustrophobic situations). Our new measure, the Phobic Anxiety Questionnaire (PHA) included 18 different situations, for each of which the degree of
anxiety and avoidance had to be rated on a 4-point scale (0 = none/never to 3 = very strong/always). All answers were summed up, which resulted in possible scores from 0 to 108.

3.1.1.4. Post-event processing. The section assessing PEP started with an instruction to remember a specific social or a specific phobic situation, respectively, experienced within the past 6 months. If more than one event came to mind, the participants were instructed to select the one that was most personally relevant. After remembering a specific situation, the participants had to indicate the kind of situation by marking one example of a long list of situations (17 for social situations, e.g., “Talking in front of a group,” “Beginning a conversation,” “Eating/drinking/writing in public”; 18 for phobic situations, e.g., “Airplanes,” “Spiders/insects,” “Bridges”). To enhance a vivid recollection of the event as well as for manipulation check, a range of questions assessed aspects of the situation such as the frequency of similar situations, anxiety during the situation, and the personal relevance. Those questions were followed by a questionnaire for PEP. We used a modified version of the Post-Event Processing Questionnaire (PEPQ) presented by Rachman et al. (2000)(revision: Fehm, Hoyer, Schneider, Lindemann, & Klusmann, submitted). The revision includes important features of the description of PEP proposed by Clark and Wells (1995), which were not covered in the original questionnaire (e.g., recollections of past failures, self-criticism, thoughts about disturbing bodily sensations). It possesses good psychometric properties, e.g., high internal consistency (x = .90) and a clear factorial structure (see Fehm et al., submitted). The modified measure consists of 17 items, which have to be answered with visual analog scales ranging from 0 to 100. Mean scores were calculated with higher scores indicating higher degrees of PEP.

3.1.2. Participants
We recruited 281 participants for the study. Most of them were students of different faculties within the Technical University of Dresden, e.g., Law School (n = 56), Linguistics (n = 26), Economics (n = 44), and Natural Sciences (n = 23). Nine participants were post-doc students (n = 3) or high school students in their last year (n = 6). The participants’ mean age was 23 years (SD = 3.1; range 17–38). About half of them were females (53.7%).

3.1.3. Procedure
Students were contacted in the cafeteria area of the Technical University of Dresden and were invited to participate in a survey study of the Department of Psychology. Their participation was to be on a voluntary basis, no payment or other reimbursement was offered. If the individual agreed, the questionnaire was handed out, and the students were asked to answer all questions on site. They were invited to contact the investigator if any questions arose. Participants returned the questionnaire to the investigator immediately after having completed it. About 95% of all questionnaires having been distributed were returned. The completion of the questionnaire took between 20 and 45 min.

3.2. Results
As direct comparisons of the two situations were of high interest, participants recalling only one specific event from one of the two categories were excluded. Thirteen participants did not report about a social situation; 56 did not report about a phobic situation. This
resulted in a final sample of $n = 217$ participants with a mean age of 22.3 years (SD = 2.59), of which 59.9% were women.

### 3.2.1. Description of the situations and scales

As we did not present one standardized situation but rather a range of situations to choose from, we first inspected the frequencies within each category. Among the social situations, talking in front of others was endorsed most frequently (26.5%), followed by talking to authorities (10.2%) and dating situations (9.7%). Among the phobic situations, fear of blood was most common (16.0%), followed by fear of heights (13.0%) and fear of dentists (11.6%). Further characteristics of the situations are presented in Table 1.

As expected, social situations elicited a significantly higher amount of evaluative anxiety ($t(217) = 16.20, p < .001, d = 1.41$), whereas phobic situations elicited a higher level of subjective threat ($t(215) = -13.75, p < .001, d = -1.29$). Social and phobic situations did not differ significantly with regard to the self-rated level of anxiety experienced in the situation ($t(210) = -1.88, p = .06, d = -.18$). Scores for adequacy were low, indicating that the participants judged their emotional reactions as going beyond the desirable level. Compared to phobic situations, social situations were experienced significantly more frequently ($Z = -2.28, n = 216, p < .024$) and were rated to be more personally relevant ($t(215) = 4.67, p < .001, d = .44$).

The time interval from the day of the study to the social event being referred to varied between 1 day and several months (median: 28 days, $M = 49, SD = 53.8$). The median for the phobic event was 30 days ($M = 67, SD = 62.9$). This difference is significant ($t(209) = -3.18, p < .003, d = -.31$). But the degree of PEP reported by the individuals was not related to the time interval (social event: $r = .031, p = .651$; phobic event: $r = .046, p = .506$), and a visual inspection of the scatterplot yielded no indication of any meaningful relations other than bivariate correlations.

### 3.2.2. PEP after different events and its course

The scores for PEP after a social situation were significantly higher than the scores after a phobic situation ($t(216) = 7.367, p < .001, d = .58$; see Table 2, upper lines).

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**Table 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Social situation</th>
<th>Phobic situation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>SD</td>
</tr>
<tr>
<td>Evaluative anxiety within the situation (rating 0–3)</td>
<td>1.71</td>
<td>(.88)</td>
</tr>
<tr>
<td>Feeling threatened during the situation (rating 0–3)</td>
<td>.28</td>
<td>(.62)</td>
</tr>
<tr>
<td>Adequacy of the emotional reaction (rating 0–3)</td>
<td>.77</td>
<td>(.88)</td>
</tr>
<tr>
<td>Relevance (rating 0–3)</td>
<td>2.23</td>
<td>(.72)</td>
</tr>
</tbody>
</table>

**Frequency (in percent per category)**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Social situation</th>
<th>Phobic situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several times a week</td>
<td>5.6</td>
<td>2.8</td>
</tr>
<tr>
<td>Several times a month</td>
<td>10.2</td>
<td>12.0</td>
</tr>
<tr>
<td>Once a month</td>
<td>14.4</td>
<td>7.9</td>
</tr>
<tr>
<td>Once every few months</td>
<td>46.3</td>
<td>36.1</td>
</tr>
<tr>
<td>Rarely</td>
<td>23.6</td>
<td>41.2</td>
</tr>
</tbody>
</table>
Table 2 (left part) also includes means and standard deviations for all measures as well as Cronbach’s $\alpha$ as a measure for internal consistency.

As all items had to be answered on a VAS ranging from 0 to 100, scores above 40 indicate an at least moderate intensity of PEP. This applied to 51% of all participants for the social situation and to 29% for the phobic situation. Thus, PEP is not restricted to social situations, but social situations are followed more often by prolonged thinking, as indicated by the higher number of participants reporting an at least moderate intensity, and social situations elicit a higher intensity of PEP than phobic ones, as indicated by the higher mean.

Additionally, participants were asked to recall the amount of ruminative thinking at three different time points (directly after the event, the day after the event and 1 week later) using a 4-point scale (1 = not at all to 4 = all the time). Means and standard deviations are depicted in Fig. 1.

Social situations are followed by a higher amount of negative thinking than are phobic situations and for both situations negative rumination strongly declined over time. Both effects are significant as revealed by an analysis of variance with two repeated measure factors (type of situation: $F(2, 183) = 226.47, p < .001, \eta^2 = .712$; time: $F(1, 184) = 53.63, p < .001, \eta^2 = .226$). In addition to the two main effects we found a significant interaction ($F(2, 183) = 3.35, p < .04, \eta^2 = .035$), which reflects a stronger decline for social situations. This is only a small effect, as indicated by the low effect size and may be a bottom effect.

3.2.3. Predictors of PEP

As to be expected, all measures were significantly inter-correlated (see Table 2, right hand side). PEP after social as well as after phobic situations was positively but only moderately correlated to the other measures. Similarly, only a moderate inter-correlation between PEP in social versus phobic situations was found. Thus, having experienced PEP after a social situation does not necessarily mean that a similar tendency is experienced in a phobic situation and vice versa.

To determine the weight of each variable within a multivariate analysis, we conducted regression analyses for each type of situation separately. As possible correlates we included general anxiety and depression as well as the scores for the fear of negative evaluation and for phobic anxiety as factors possibly specific for each situation. The
frequency of the situation and the self-reported personal relevance of the situation in question were also included. To examine the influence of the time span since the event, the number of days between the event and the day of the study was included. As a last predictor, we chose the score for PEP of the other situation. Because no specific hypotheses existed, all predictors were entered simultaneously (see Tabachnick & Fidell, 1996, pp. 146–156).

The upper part of Table 3 shows the results for PEP after a social situation. The portion of explained variance was 18%. The level of PEP after a phobic situation as well as the fear of negative evaluation contributed to explaining the variance of PEP after a social situation. When three prominent characteristics of the situation were entered in a second block (time since event, frequency of the event, relevance of the event), the amount of explained variance rose to 23%. The frequency as well as the relevance of the event contributed significantly (time: $\beta = .112, p = .074$; frequency: $\beta = .176, p = .006$, relevance: $\beta = .147, p = .021$).

For the phobic situation (see Table 3, lower part), the amount of explained variance was 20%. Again, the amount of PEP after the other situation contributed significantly. In addition, general anxiety as well as phobic anxiety were significant predictors.

Again, the addition of situational variables increased the amount of explained variance, then being 35%. For phobic situations, only the relevance of the situation contributed significantly (time: $\beta = .104, p = .082$; frequency: $\beta = .116, p = .060$, relevance: $\beta = .401, p < .001$).

Three aspects of the results deserve to be highlighted:

1. The fear of negative evaluation is a significant predictor of PEP after social situations but not after phobic situations. This means that the positive correlation between social anxiety and PEP is specific for social situations and that it does not apply to PEP independent of the type of situation.
(2) PEP after one situation significantly predicts the amount of PEP after another situation. This may point to a general predisposition to prolonged rumination after distressing events.

(3) The time elapsed between the event and the day of the study was not a significant predictor of PEP after phobic situations. In addition, analyses with a reduced sample including only those with more recent recollections (less than 3 months) revealed the same pattern of predictors for PEP after social situations.

### 3.2.4. Type of social situation
A possible explanation for higher PEP scores after social situations might be assumed to lie in the more ambiguous character of social situations. To explore further this hypothesis we categorized the social situations referred to by the participants as being of interpersonal or performance type. We assumed that interpersonal situations would elicit more PEP because these situations might be perceived as more ambiguous due to their interactive character. Our results confirmed this hypothesis, as interpersonal situations are followed by a significantly higher amount of PEP than are situations of the performance type (interpersonal situations: $M = 45.05$, $SD = 20.64$; performance situations: $M = 35.46$, $SD = 17.78$; $t(194) = -3.49$, $p < .001$, $d = .50$).

### 4. Discussion
In the present study, we examined to what extent post-event processing (PEP) is specific for social anxiety or for social situations. We found that social situations elicit a significantly higher amount of PEP than do phobic situations and that social situations are more frequently followed by negative cognitive processing. But it should also be noted that the effect sizes of these differences were only in the medium range.

Social anxiety or fear of negative evaluation is a significant predictor for the amount of PEP after social but not after phobic situations. This is important, because one could also have speculated that social anxiety leads to a general tendency to ruminate about events, either socially evaluative or generally upsetting ones.

### Table 3
Prediction of PEPQ scores ($n = 217$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEP after a social situation</strong> ($R_{\text{corr}}^2 = .181$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEP after a phobic situation</td>
<td>.249</td>
<td>.080</td>
<td>.215</td>
<td>.002</td>
</tr>
<tr>
<td>Fear of negative evaluation</td>
<td>7.611</td>
<td>2.427</td>
<td>.218</td>
<td>.002</td>
</tr>
<tr>
<td>Phobic anxiety</td>
<td>.003</td>
<td>.118</td>
<td>.001</td>
<td>.982</td>
</tr>
<tr>
<td>General anxiety</td>
<td>.876</td>
<td>.602</td>
<td>.119</td>
<td>.147</td>
</tr>
<tr>
<td>Depression</td>
<td>.393</td>
<td>.484</td>
<td>.060</td>
<td>.418</td>
</tr>
<tr>
<td><strong>PEP after a phobic situation</strong> ($R_{\text{corr}}^2 = .197$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEP after a social situation</td>
<td>.157</td>
<td>.057</td>
<td>.187</td>
<td>.006</td>
</tr>
<tr>
<td>Fear of negative evaluation</td>
<td>1.136</td>
<td>2.095</td>
<td>.039</td>
<td>.588</td>
</tr>
<tr>
<td>Phobic anxiety</td>
<td>.201</td>
<td>.099</td>
<td>.134</td>
<td>.043</td>
</tr>
<tr>
<td>General anxiety</td>
<td>1.239</td>
<td>.503</td>
<td>.199</td>
<td>.015</td>
</tr>
<tr>
<td>Depression</td>
<td>.664</td>
<td>.403</td>
<td>.122</td>
<td>.101</td>
</tr>
</tbody>
</table>
In sum, PEP seems to be specifically associated with social situations as well as with social anxiety within the set of variables and situations included in our study. Vice versa, PEP was not predicted by more global measures of anxiety and depression, and, therefore, it does not seem to be an unspecific indicator of psychopathology or another expression of negative affectivity. Yet, a second and strong factor influencing PEP can be seen in a general tendency to negatively ruminate after anxiety-provoking events, as indicated by the significant contribution of the PEP level of the respective other situation.

Furthermore, it was shown that PEP is not restricted to cases of severe social anxiety or social phobia, as indicated by the fact that 51% of all participants experienced some form of at least moderately prolonged processing after an anxiety-provoking social situation. Thus, it should not be regarded as a pathological process per se. PEP was elevated particularly for interaction situations as opposed to performance occasions. Since social role expectations may be less clearly defined in interaction situations, this indicates that the ambiguity of the situation might be an important predictor for prolonged processing.

Two aspects should be addressed in future research. First, there must be other factors that determine the amount of PEP, as indicated by the low portion of explained variance. They might be assumed to be characteristics of the situation as well as personality characteristics either on the state or trait level. Second, the strong relation between the PEP scores for both situations has to be closely inspected. It may result from the similar methodology used to assess PEP after both situations in our study as well as reflect a general tendency to ruminate or to worry. More distal predictors for repetitive negative thinking such as state orientation (Kuhl, 1994) or dysfunctional self-consciousness (Hoyer, 2000) can be considered as possible candidates.

Among the methodological restrictions of our study is the fact that the information about PEP was based solely on self-report. Thus, we cannot rule out the tendency of more socially anxious participants to more easily report about negative processes. But this tendency would not explain the different pattern of predictors for PEP after the two different situations. Second, the self-report was retrospective, which might also have influenced the individual responses. However, the lack of a systematic relation between the time interval since the event that was referred to and the amount of PEP does not support this interpretation. Third, the measurement of social and phobic anxiety might be considered as problematic because the two instruments are not completely equivalent. The PHA has been developed specifically for the present study, whereas the FNE scale has been used in a wide range of studies and its psychometric properties are well documented. Against that concern, it could be argued that the psychometric properties for our new measure are also acceptable in the present study. But even more importantly in our view, the content of the two measures differs in that they assess different facets of anxiety: whereas the FNE focuses on the cognitive facet of social anxiety, the PHA also addresses the behavioral expression of anxiety, e.g., the degree of avoidance. An optimal solution of the problem would be to have two formally identical questionnaires for each social and phobic anxiety—but these have still to be developed. And even then, it would still remain unclear if the formal equivalence would also mean that for each type of anxiety or fear it would tap the central aspect and thus be equivalent regarding the content.

The finding that PEP, rather than being an unspecific expression of psychopathology, may be a relatively specific phenomenon linked to social situations (and accentuated in social phobias) has also therapeutic implications. Standard interventions aiming at a general reduction of anxiety and/or depression cannot be expected to reduce PEP entirely
as an indirect effect of improvement in mood and anxiety. Thus, the necessity of specifically addressing PEP within the treatment of social phobia is confirmed as other studies have clearly shown the detrimental effect of those processes. However, it may be helpful for patients to learn that this way of thinking is not pathological per se, but that they suffer from a higher amount of an inherently normal process. Future studies may investigate whether, beyond its mere frequency, duration, or intensity, the consequences of PEP (e.g., on the self-image) are specific and more detrimental in social phobia.

References


