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The Relationship between Positive Beliefs about Post-Event Processing and Social Phobia Symptoms

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The Relationship between Positive Beliefs
about Post-Event Processing and Social Phobia Symptoms

by

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in partial fulfillment of the requirements for the degree of

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COLLEGE OF ARTS AND SCIENCES

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Abstract

Meta-cognitive models have been utilized to explore the relations between worry and generalized anxiety disorder, as well as, the associations between rumination and depression. However, relatively few studies have focused on the role of meta-cognitive variables and social phobia symptoms. It is possible that individuals with social phobia follow a pattern of thinking similar to that of those who experience depressive rumination and worry. Specifically, it may be that individuals with social phobia hold positive beliefs about their highly negative prolonged post-event evaluations of social interactions. The primary goal of this study was the development and assessment of the Positive Beliefs about Post-Event Processing Questionnaire (PB-PEPQ). Further, it was predicted that post-event processing would mediate the relationship between positive beliefs about post-event processing and social phobia symptoms. The findings from this study suggested that the PB-PEPQ is a valid and reliable construct. Additionally, the findings provide initial evidence for a cognitive model in which individuals who tend to hold positive beliefs about post-event processing, tend to engage in post-event processing which may increase social phobia symptoms.

Post-Event Processing and Social Phobia

The Relationship between Positive Beliefs about Post-Event Processing and Social Phobia Symptoms

Social phobia (or social anxiety disorder) affects approximately 7 to 12% of the population in the United States (Furmark, 2002). This disorder typically begins in adolescence and is often chronic, possibly lasting for decades if left untreated (Beidel, Morris, & Turner, 2004; Wittchen & Fehm, 2003). Further, social phobia leads to a number of negative outcomes including chronic stress and diminished quality of life. Additionally, this disorder has been found to place individuals at increased risk for other psychiatric disorders, including depression, substance abuse disorders, and suicide (Beidel, et al., 2004; Wittchen & Fehm, 2003).

Treatment for social phobia typically involves cognitive-behavioral therapy or antianxiety or antidepressant medications (Heimberg & Barlow, 1988; Wells, 2007; Wells & Carter, 2001). Although therapy and medication have been somewhat useful in reducing the symptoms, not everyone seems to make a full recovery. Consequently, additional research is needed to understand the underlying mechanisms related to the development and maintenance of social phobia. One promising direction for research is the role of cognitive variables in the development and maintenance of social phobia symptoms, and it is possible that continued research in this area may lead to improved treatment for those who suffer from this disorder (Clark & Wells, 1995).

Meta-Cognitive Model of Social Phobia

Clark and Wells (1995) proposed a cognitive model of social phobia, in which particular beliefs and assumptions lead to the development and maintenance of social phobia. It was hypothesized that individuals with social phobia develop negative

schemas, or general negative belief systems, about themselves and their social world. More specifically, the core beliefs of individuals with social phobia appear to include a strong desire to project a favorable impression to others, along with the belief that one is unable to do so (Clark & Wells, 1995). Further, individuals with social phobia may engage in several specific cognitive processes that prevent them from disconfirming their negative beliefs surrounding social interactions.

While in a social situation, first, they make assumptions about the standards and the consequences of their performance. Second, their assumptions lead them to appraise benign or ambiguous social cues as negative. Third, they also begin self-monitoring to determine how they appear to others. Fourth, they engage in safety seeking behaviors to avoid social failure. Fifth, they interpret their arousal (i.e. sweating and increased heart rate) to reflect impending or actual failure.

In essence, individuals with social phobia experience a substantial amount of anxiety preceding a social situation. Consequently, during a social interaction they continuously self-evaluate in an attempt to display positive social behavior (Clark & Wells, 1995). Due to their negative biases about themselves and others, they are likely to overlook the positive social cues others are displaying towards them and attend to negative social cues. This negative appraisal process then leads to anxiety in the social situation and this fear enhances the negative beliefs surrounding social interactions.

Anticipatory and post-event processes also are said to occur (Clark & Wells, 1995). In particular, prior to a social situation, individuals with social phobia experience anticipatory anxiety (Clark & Wells, 1995). More specifically, before a social interaction, they tend to retrieve memories of previous social interactions in which they

believed they failed. This process enhances anticipatory anxiety and the desire to avoid the impending social situation. In addition to anticipatory anxiety, individuals with social phobia also may engage in post-event processing. This process is discussed in detail in the next section.

Post-Event Processing

Post-event processes (PEP) are prolonged ruminative processes following a social situation (Clark, 2001; Clark & Wells, 1995). Negative self-assumptions during social situations seem to create negative evaluations following social situations. These negative evaluations may actually enhance negative evaluations of previous social interactions and may influence appraisals of subsequent social interactions (Clark, 2001). Post-event processing is particularly important because it indicates that the anxiety and negative processing during a social interaction does not necessarily end when the social interaction ends (Clark & Wells, 1995).

Rachman, Gruter-Andrew, and Shafran (2000) performed one of the initial studies on PEP. Based on interviews with undergraduate students, the authors developed the Post-Event Processing Questionnaire (PEPQ) and found a significant relationship between post-event processing and social anxiety. In particular, participants high in social anxiety reported frequent recall of previous social events. Further, they reported the memories to be intrusive, to interfere with concentration, and to be difficult to control. In addition, socially anxious individuals reported that thoughts led to a desire to avoid similar social situations and a desire to relive the experience in order to correct perceived mistakes.

Kocovski, Endler, Rector, and Flett (2005) used evaluations of social vignettes to examine PEP. They found that participants high in social anxiety were more likely to report engaging in PEP, and tended to think more about how they wished a social situation could have been better. In a similar study, Dannahay and Stopa (2006) asked participants to appraise their performance after a conversation with a confederate and prior to an anticipated second conversation with another confederate 1 week later. Results indicated that individuals high in social anxiety experienced more anxiety during the interaction, underestimated their performance, and engaged in PEP more than individuals low in social anxiety. Other research studies have provided additional support for the association between social phobia symptoms and post-event processing (Fehm, Schneider, & Hoyer; 2007; McEnvoy & Kingsep, 2006; McEnvoy, Mahoney, Perini, & Kingsep 2009). Overall, it appears that PEP is a cognitive process that may play a role in the maintenance and development of social phobia.

In addition to a general relation to social anxiety symptoms, initial evidence indicates specificity of PEP to social anxiety. In particular, Fehm et al. (2007) examined the extent to which post-event processing is specific to social anxiety when compared to other phobias. Their results indicated that, when compared to phobic events, social events were more often and more intensely followed by PEP. Additional evidence related to the specificity of PEP to social phobia was found by McEnvoy et al. (2009). In particular, the authors examined changes in social anxiety, depression, meta-cognitions, and post-event processing following therapeutic intervention for individuals with social phobia. Following cognitive behavioral therapy, reductions in post-event processing

were associated with social anxiety reductions, but were not associated with reductions in depression (McEnvoy et al., 2009).

Other studies have focused on the individual variables that may predict the tendency to engage in PEP (Gaydukevych & Kocovski, 2012; Kocovski & Rector, 2007; Makkar & Grisham, 2011). Based on a non-clinical sample, Kocovski and Rector (2007) found that social anxiety and anxious rumination (including perceived consequences of anxiety, perceived failure to cope with anxiety, and positive reframing) predicted PEP; however, anxiety sensitivity did not predict PEP. Using a student sample, Makkar and Grisham (2011) measured PEP twenty four hours after a conversation and a speech. Results showed that negative assumptions about the self and the world were unique predictors of PEP after controlling for depression, trait anxiety, and other cognitive variables. Finally, Gaydukevych and Kocovski (2012), using a student sample, found those high in self-focused attention to engage in more frequent and negative PEP. Overall, it seems some factors may help to determine the likelihood of an individual engaging in PEP.

Other research has shown that engagement in PEP may have negative consequences beyond that of social phobia symptoms. Specifically, researchers have found that individuals high in PEP underestimate the positivity of their performance (Abbott & Rapee, 2004; Dannahay and Stopa, 2006; Perini, Abbott & Rapee, 2006). Mellings and Alden (2000) examined self-focused attention, PEP, and anticipatory processes in socially anxious and non-anxious individuals. Results indicated that PEP reinforced the recall of negative self-related information. These findings are important in further understanding PEP and social phobia.

Post-Event Processing and Similar Meta-Cognitive Processes. In addition to social phobia, similar meta-cognitive models have been developed for generalized anxiety disorders (GAD) and depression, and it appears that these models have been more extensively studied. It is possible that these models may inform cognitive models of social phobia.

Wells (1995) put forth the meta-cognitive model of generalized anxiety disorder (GAD). According to this model, positive and negative meta-cognitive beliefs about worry are associated with the development and maintenance of pathological worry and GAD symptoms. Positive beliefs about worry include the perceived benefits of worry. Negative beliefs about worry include the belief that worry is harmful. Essentially, worry is maintained by maladaptive meta-cognitions (Wells, 2005; Wells & Carter, 2001). Wells (2007) proposed meta-cognitive therapy as a way to reduce symptoms of GAD and social phobia. Specifically, he suggested modifying beliefs and self-attention so that there is a greater emphasis on external attention. If the external social environment can be processed more than the inner self perhaps these individuals can reduce their positive beliefs about the need to worry or PEP.

Rumination involves “self-focused thinking in which individuals tend to negatively appraise themselves, feelings, behaviors, situations, life stresses, and ability to cope” (Papageorgiou & Wells, 2001b, p. 14). The concept of rumination is typically discussed in the context of depression literature. Papageorgiou and Wells (2003) created the cognitive model of rumination and depression. As with the meta-cognitive model of GAD, positive and negative beliefs about rumination are hypothesized to be associated with the tendency to engage in ruminative processes. More specifically, positive beliefs

about rumination include the idea that rumination is a helpful coping strategy, and negative beliefs about rumination include the idea that rumination is harmful or destructive. These negative beliefs in turn are hypothesized to create depressive symptoms (Papageorgiou, & Wells, 2003; Roelofs, Huibers, Peeters, Arntz, & van Os, 2010).

Overall, similarities between the cognitive models of GAD, depression, and social phobia seem to exist. Further, there is evidence to support the similarities between worry, rumination, and PEP (McEnvoy, Mahoney, & Moulds, 2010). Consequently, it is possible that concepts from the metacognitive models of GAD and depression can be used to provide additional insight into the meta-cognitions related to the development and maintenance of social phobia.

Post-Event Processing and Positive Meta-Cognitive Beliefs. As discussed above, evidence suggests that positive beliefs about rumination predict the degree to which an individual engages in depressive rumination, and positive beliefs about worry predict the degree to which an individual engages in worry. Based on these findings, it is possible that positive beliefs about post-event processing are associated with the degree to which an individual engages in PEP and displays social phobia symptoms. More specifically, it is possible that individuals who hold positive beliefs about the benefits of PEP may be more likely to engage in PEP. Although examination of positive beliefs about post-event processing may contribute to the understanding of the cognitive processes related to the development and maintenance of social phobia, positive beliefs have received surprisingly little attention in the research literature.

Relevant to the concept of positive beliefs about post event processing, Wong and Moulds (2010) examined the function of ruminative processes in individuals with social anxiety symptoms. The authors created the nine item Positive Beliefs about Rumination Scale-Adapted for Social Anxiety questionnaire. In a student sample, they found social anxiety to be positively related to positive beliefs about rumination after controlling for gender and level of depression. In a second study, they found that positive beliefs about rumination partially mediated the relationship between social anxiety and rumination. Wong and Moulds (2010) focused on the positive beliefs about rumination leading to social phobia symptoms; however, to date, no known studies have focused on the positive beliefs about PEP. Therefore, the general purpose of the current study was to create and examine the initial psychometric properties of a measure specifically designed to examine the positive beliefs about PEP.

Summary and Focus of the Current Study

Meta-cognitive models have received attention in relation to worry/generalized anxiety disorder, and rumination/depression; however, relatively few studies have focused on the role of meta-cognitive variables and social phobia symptoms. Although PEP is a potential meta-cognitive variable related to social phobia, little is known about the processes that lead to engagement in PEP. It is possible that individuals with social phobia follow a pattern of thinking similar to that of those who experience depressive rumination and worry (Clark & Wells, 1995; Papageorgiou, & Wells, 2003). In particular, it may be that individuals with social phobia hold positive beliefs about PEP which leads to prolonged and particularly self-critical PEP which may, in turn, lead to

social phobia. To the researcher's knowledge, no other study has examined positive beliefs in the context of post-event processing.

The focus of the current study was on the development and assessment of the psychometric properties of a measure of positive beliefs about post-event processing (PB-PEP). It was anticipated that the Positive Beliefs about Post-Event Processing Questionnaire (PB-PEPQ) would exhibit adequate reliability. Further, this measure was expected to exhibit adequate criterion validity, as it was expected to be significantly associated with measures of social phobia and post-event processing. The PB-PEPQ was also expected to exhibit adequate incremental validity, as the measure was expected to predict variance in social phobia after controlling for other meta-cognitive variables. Finally, it was anticipated that post-event processing would mediate the relationship between positive beliefs about post-event processing and social phobia symptoms.

Method

Participants

Three hundred participants (77 males, 223 females) were recruited from psychology classes at the University of North Florida, and participants were offered extra credit in exchange for participation. The mean participant age was 23.43 years ($SD = 6.194$, Range 18-61), and the majority of participants identified themselves as Caucasian (69%). A more detailed summary of the descriptive statistics for demographic variables are provided in Table 1.

Procedure

The study was survey-based, and data were collected in classroom settings. Participants who took part in the study were first asked to complete an informed consent

form. Following the completion of informed consent form, participants completed the survey packet. Surveys took approximately 20 minutes to complete, and a member of the research team was available to assure independent responding and to answer participant questions.

Measures

In addition to a demographic questionnaire, the following measures were administered:

Positive Beliefs about Post-Event Processing Questionnaire (PB-PEPQ). The PB-PEPQ is a twenty-three item questionnaire developed for the purpose of this study to assess the positive beliefs that individuals hold about the benefits of engaging in post-event processing. More specifically, items assessed recent social interactions, thoughts about the interaction after it occurred, and motivation for reviewing the social interaction. The items are rated on a five point Likert scale, with responses ranging from 1 (do not agree) to 4 (agree very much). See appendix for full PB-PEPQ. Analyses of the PB-PEPQ showed strong internal consistency (Cronbach's alpha of .92).

Item development. First, authors generated a comprehensive list of potential items based on possible reasons that may lead an individual to engage in post-event processing. Once the initial list was completed, an item-by-item review of measures of similar constructs was conducted to search for content not included in the original item list. In particular, the review included the Post-Event Processing Questionnaire (PEPQ; Rachman et al., 2000), Positive Beliefs about Rumination Scale (PBRS; Papageorgiou & Wells, 2001b), Meta-Cognitions Questionnaire (MCQ-30; Wells & Cartwright-Hatton, 2004), and Meta-Worry Questionnaire (MWQ; Wells, 2005). Five items on the PB-

PEPQ were reworded based on existing measures, including two items from the MWQ (Wells, 2005) and three items from the PBRS (Papageorgiou & Wells, 2001b). Items were reworded to be more specific to the construct of PEP.

Post Event Processing Questionnaire-Revised (PEPQ-R). The PEPQ-R (McEnvoy & Kingsep, 2006) assesses the extent to which an individual engages in a post-event processing, or, in other words, a detailed review of a social anxiety producing event. In the current study, the original visual analogue scale was changed to a four point Likert scale. The anchors for the first question were 1 “none at all” to 4 “a lot.” The anchors for questions 2-14 were 1 “not at all” to 4 “very much.” The anchors for question 1 were changed from that of the other questions to create an answer that best suited the wording of that particular item. The PEPQ-R has been found to be reliable and valid, showing high internal consistency and validity. In the current study, Cronbach’s alpha indicated good reliability ($\alpha = .88$).

Social Phobia Inventory (SPIN). The Social Phobia Inventory evaluates fear, avoidance, and physiological discomfort in social situations (Conner et al., 2000). There are seventeen items rated on a five point Likert scale (1 = not at all, 5 = extremely). The SPIN has been shown to have good psychometric properties. In particular, the measure has exhibited good test-retest reliability, internal consistency, and divergent validity (Conner et al., 2000). Further, good convergent validity was found when compared to other measures of social phobia (Conner et al., 2000). In the current study, Cronbach’s alpha indicated good reliability ($\alpha = .92$).

Positive Beliefs about Rumination Scale (PBRS). The Positive Beliefs about Rumination Scale is a nine items scale designed to assess the extent to which an

individual believes rumination is a useful coping strategy for (Papageorgiou & Wells, 2001b). Response options on the measure are based on a four point Likert scale (1 = do not agree, 4 = agree very much). The PBRs has been found to have good internal consistency and to possess good test-retest reliability (Papageorgiou & Wells, 2001b; Roelofs, Huibers, Peeters, Arntz, & van Os, 2010). The measure has exhibited adequate convergent validity, which includes a significant positive association with Meta-Cognitions Questionnaire (MCQ), the short form of the Rumination Scale, and various other measures (Cartwright-Hatton & Wells, 1997; Nolen-Hoeksema, 1991; Papageorgiou & Wells, 2001b). In the current study, a Cronbach's alpha of .94 indicated strong reliability.

Meta-cognitions Questionnaire-30 (MCQ-30). The Meta-Cognitions Questionnaire (MCQ-30) is a thirty item self-report measure that assesses meta-cognitive beliefs that are considered essential in the meta-cognitive model of psychological disorders (Wells & Cartwright-Hatton, 2004). Responses are on a four point Likert scale (1 = do not agree, 4 = strongly agree). The five factors within the questionnaire are cognitive confidence, positive beliefs about worry, cognitive self-consciousness, negative beliefs about worry (including the uncontrollability and danger of worry), and beliefs about the need to control thoughts. Researchers have found positive correlations between the MCQ-30 and measures of worry and trait anxiety, suggesting adequate construct validity (Wells & Cartwright-Hatton, 2004). Also, test-retest reliability has been found to be adequate (Wells & Cartwright-Hatton, 2004). The current study, Cronbach's alpha indicated good reliability ($\alpha = .90$).

Results

Descriptive Statistics

The mean age was 23.4 years and the majority of the participants identified themselves as female (74.4%), single (87.7%), Caucasian/white (69.2%), had some college experience (87.3%), and made less than \$20,000 a year (38.3%). Descriptive statistics for the study variables is provided in Table 2, and a correlation matrix of the study variables is provided in Table 3.

Positive Beliefs about Post-Event Processing, Post-Event Processing, and Social Phobia

A series of regression analyses were conducted to determine the relation between positive beliefs about post-event processing, post-event processing, and social phobia. The first regression analysis was conducted to examine the relation between positive beliefs about post-event processing as measured by the PB-PEPQ and social phobia symptoms as measured by the SPIN. The PB-PEPQ was found to significantly predict social anxiety symptoms, $F(1, 282) = 96.84, p < .001, R^2 = .26, \beta = .51$. The second regression analysis was conducted to determine the relation between positive beliefs about post-event processing and post-event processing as measured by the PEPQ-R. The PB-PEPQ was found to significantly predict PEPQ-R scores, $F(1, 261) = 70.45, p < .001, R^2 = .21, \beta = .32$. A third regression analysis was conducted to determine the degree to which positive beliefs about post-event processing and post-event processing simultaneously predicted social phobia. The overall model was significant, $F(2, 251) = 52.43, p < .001, R^2 = .30$ and both predictor variables were significantly associated with SPIN scores ($\beta = .32$, (PB-PEP), $\beta = .31$ (PEP)). Collectively, the above findings provide

evidence for the criterion validity of the PB-PEPQ, as it was found to be significantly associated with a measure of post-event processing and a measure of social phobia symptoms.

Next, a mediation model was explored to determine if PEP mediates the relationship between PB-PEP and social phobia. The model was significant ($z = 4.39, p < .001$) and the mediation pathway accounted for 29% of the variance in relationship between PB-PEP and social phobia (see Figure 1).

Incremental Validity of the Positive Beliefs about Post-Event Processing

Questionnaire

A hierarchical regression analysis was conducted to determine the degree to which PB-PEPQ scores predicted social phobia beyond the variance accounted for by the PEPQ-R, the MCQ-30, and the PBRS. In the first step of the regression equation, the PEPQ-R, the positive beliefs about worry and negative beliefs about worry subscales of the MCQ-30, and the PBRS were entered as predictor variables. The SPIN was the criterion variable. The first step of the model was significant, $F(4, 249) = 29.78, p < .001, R^2 = .33$, and the addition of the PB-PEPQ in the second step of the regression equation led to a significant improvement in the model, $F(5, 249) = 28.91, p < .001, \Delta R^2 = .05$. Further, based on an examination of the standardized beta weights, PB-PEPQ ($\beta = .26$) was the most robust predictor of social phobia. The PEPQ-R ($\beta = .21$), the positive beliefs about worry subscale of the MCQ ($\beta = .13$), and the negative beliefs about worry subscale of the MCQ ($\beta = .21$) also were significant predictors of SPIN scores. In contrast, the PBRS ($\beta = .02$) was not found to be associated with SPIN scores.

Discussion

The focus of this study was development and validation of a measure designed to assess positive beliefs about post-event processing. Overall, findings from this initial study indicated that the measure has promising psychometric properties. In particular, the measure was found to exhibit criterion validity, as the PB-PEPQ was a significant predictor of post-event processing scores and social phobia symptoms. In fact, analyses indicated that the PB-PEPQ appears to be a slightly more robust predictor of social phobia symptoms than post-event processing, as measured by the PEPQ-R. Further, the measure exhibited significant incremental validity, as it was found to be a significant predictor of social phobia symptoms after controlling for positive and negative beliefs about worry, positive beliefs about rumination, and post-event processing. Overall, this preliminary research suggests that the concepts of positive beliefs about post-event processing is a valid and reliable construct. It is noteworthy that the current effort is the first known study to directly assess the construct of positive beliefs about post-event processing.

Consistent with meta-cognitive models of rumination (Wells, 2005; Wells & Carter, 2001) and worry (Papageorgiou, & Wells, 2003; Roelofs et al., 2010), it was hypothesized that post-event processing would mediate the relationship between positive beliefs about post-event processing and social phobia. As anticipated, PEP was found to be a significant partial mediator of the association between PB-PEP and the mediation pathway accounted for 29% of the variance in relationship between PB-PEP and social phobia. These findings provide initial evidence for a cognitive model in which

individuals who tend to hold positive beliefs about post-event processing tend to engage in post-event processing, which may then lead to social phobia symptoms.

A number of studies have provided support for the relevance of PEP in relation to social phobia (Dannahay & Stopa, 2006; Hinrichsen & Clark, 2003; Kocovski et al. 2005; Rachman et al., 2000). Further, research has been conducted to examine the correlates of PEP (Kocovski & Rector, 2007; Makkar & Grisham, 2011), negative self-biases in PEP (Gaydukevych & Kocovski, 2012; Makkar & Grisham, 2011; Mellings & Alden, 2000), and similarities and differences of PEP to other constructs (Fehm et al. 2007; McEnvoy et al., 2010; McEnvoy et al., 2009). However, the current findings have provided unique insight into the meta-cognitive variables that may motivate an individual to engage in PEP. These findings may provide a new direction for research on PEP and may have implications for the treatment of social phobia. Specifically, the modification of positive beliefs about PEP may decrease the degree to which individuals engage in PEP and experience social phobia symptoms.

Although this study has provided potentially useful information for the treatment of social phobia, limitations and directions for future research exist. First, this study provides only preliminary results required to establish the psychometric properties of the PB-PEPQ. Follow-up research is recommended in which the factor structure of the measure is confirmed and in which the test-retest reliability of the measure is examined. Second, the study was based on self-report measures. As a result, follow-up studies are recommended in which more interactive measures of social interaction are used. For example, staged discussions with individuals high in social phobia symptoms could be useful (Dannahay & Stopa, 2006). Third, the study was based on a non-clinical sample

of students. Future research on positive beliefs about PEP should involve the comparison of clinically diagnosed patients with social phobia to individuals without social phobia.

Conclusion

The high prevalence rates and lasting negative impact of social phobia creates a necessity for continued research into the cognitive processes that may lead to the development and maintenance of social phobia. In this study, the aim was to determine if individuals with social phobia symptoms follow a pattern of thinking similar to that of those who experience depressive rumination and worry. More precisely, the aim was to determine if individuals with social phobia believe that prolonged post-event processing of social situations is beneficial and necessary. The results were consistent with the hypotheses. The PB-PEPQ was found to be a significant indicator of social phobia. Additionally, PEP was found to mediate the relationship between PB-PEP and social phobia. Further research is needed on the role of positive beliefs about post-event processing in order to facilitate the treatment and reduction of social phobia.

Table 1

Descriptive statistics for demographic variables

Variable	Frequency	Percent
Gender		
Female	223	74.4
Male	77	25.7
Relationship Status		
Single	263	87.7
Married	28	9.3
Divorced	8	2.7
Widowed	1	0.3
Race/Ethnicity		
Caucasian/White	207	69.2
African-American/Black	38	12.7
Asian/Pacific Islander	16	5.3
Hispanic	26	8.7
Other	12	4.0
Education		
High school grad/GED	2	.7
Some college	262	87.3
College graduate	34	11.3
Graduate or professional	1	0.3
Income		
< \$20,000	115	38.3
\$20,000-39,000	53	17.7
\$40,000-59,000	57	19.0
\$60,000-79,000	22	7.3
\$80,000-99,000	16	5.3
> \$100,000	37	12.3

Table 2

Descriptive statistics for measures

Measure	<i>n</i>	M	<i>SD</i>
SPIN	288	38.63/85.00	13.57
PB-PEPQ	295	56.00/92.00	13.17
PEPQ-R	267	31.00/56.00	8.91
PBRS	295	19.25/36.00	7.35
MCQ-30	294	63.97/120.00	15.31

Note. Social Phobia Inventory (SPIN), Positive Beliefs about Post-Event Processing Questionnaire (PB-PEPQ), Post-Event Processing Questionnaire Revised (PEPQ-R), Positive Beliefs about Rumination Scale (PBRS), Meta-Cognitions Questionnaire (MCQ-30)

Table 3

Correlations between measures

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. SPIN	—	.506**	.470**	.350**	.581**
2. PB-PEPQ	.506**	—	.462**	.382**	.519**
3. PEPQ-R	.470**	.462**	—	.369**	.528**
4. PBRS	.350**	.382**	.369**	—	.494**
5. MCQ-30	.581**	.519**	.528**	.494**	—

Note. **Correlations are significant at the .01 level. Social Phobia Inventory (SPIN), Positive Beliefs about Post-Event Processing Questionnaire (PB-PEPQ), Post-Event Processing Questionnaire Revised (PEPQ-R), Positive Beliefs about Rumination Scale (PBRS), Meta-Cognitions Questionnaire (MCQ-30)

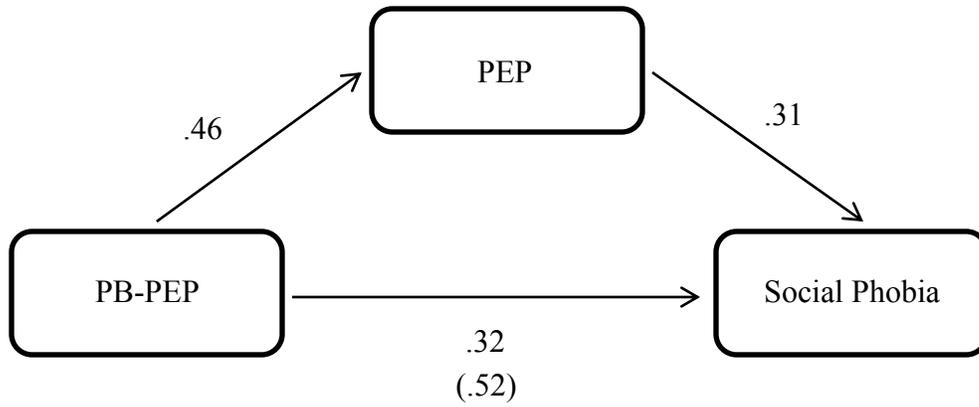


Figure 1. Mediation model of positive beliefs about post-event processing, post-event processing, and social phobia.

Appendix

INFORMED CONSENT FORM

You are being asked to participate in a research study conducted by the University of North Florida's titled, *The Relation between Positive Beliefs about Post Event Processing and Social Phobia Symptoms*. The general purpose of this study is to examine your thoughts about social interactions that you have had. Specifically you will be asked to complete several of self-report measures to assess your behaviors, thoughts, and feelings. It is expected that this study will take approximately 20 minutes to complete. In order to participate in the study it is important that you read and understand the following information and sign at the bottom of this form.

Voluntary Participation: Your participation in this study is completely voluntary. Refusal to participate will involve no penalty or loss of benefits. Furthermore, you may discontinue at any time without penalty or loss of benefits.

Benefits and Risks: University of North Florida students may be offered extra credit for completion of the measures; however, students should be aware that it is up to the discretion of the instructor to offer extra credit. No other compensation will be awarded, including no monetary compensation. Risks for participation are minimal and unlikely; however, those who participate will be answering questions about personal thoughts and feelings. Although not anticipated, if stress were to arise as a result of participation, you may want to contact the University of North Florida Counseling Center for assistance at (904) 620-2602. You are also welcome to contact the Brian Fisak, Ph.D., the principal investigator of this study at (904) 620-1691 (e-mail: b.fisak@unf.edu).

Confidentiality: Steps have been taken to maximize the anonymity of your responses. In particular, this signed consent form will be separated from the survey packet. As a result, your name will not be associated with your responses on the survey. Further, all information from this study will be stored in a secure location.

Minors: You must be at least 18 years of age to participate in this study. Minors are not eligible to participate in this study. By signing this form you are attesting to the fact that you are at least 18 years of age.

Contact Information: If you have any questions or concerns about this study or our participation, you can contact the faculty sponsor of this study, Brian Fisak, Ph.D. at (904) 620-1691 (e-mail: b.fisak@unf.edu) . Further, if you have any questions or concerns about the right of research subjects, you can contact Dr. Katherine Kasten, UNF IRB Chairperson, at (904) 620-2498.

Signatures:

Participant

Date

Principle Investigator

Date

DEMOGRAPHICS INFORMATION

1. Your gender: _____ Female _____ Male

2. Your age in years: _____

3. Your relationship status:
_____ Single
_____ Married
_____ Divorced
_____ Widowed

4. Your race/ethnicity:
_____ Caucasian/White
_____ African-American/Black
_____ Asian/Pacific Islander
_____ Hispanic
_____ Other

5. Highest level of education:
_____ Elementary school
_____ Junior high school
_____ High school graduate/GED
_____ Some college
_____ College graduate
_____ Graduate or professional degree

6. What is your estimated household income?
_____ < \$20,000
_____ \$20,000-\$39,000
_____ \$40,000-\$59,000
_____ \$60,000-79,000
_____ \$80,000-\$99,000
_____ > \$100,000

7. Have you ever been diagnosed with any of the following?
_____ Post-traumatic stress disorder
_____ Obsessive compulsive disorder
_____ Depression
_____ Social phobia
_____ Generalized anxiety disorder
_____ Specific phobia
_____ Other

SOCIAL PHOBIA INVENTORY (SPIN)

Instructions: Please indicate the degree to which you are distressed by or experience the following.

	<i>Not at all</i>				<i>Extremely</i>
1. I fear people in authority.	1	2	3	4	5
2. I am bothered by blushing.	1	2	3	4	5
3. I fear parties and social events.	1	2	3	4	5
4. I avoid talking to strangers.	1	2	3	4	5
5. I have a fear of criticism.	1	2	3	4	5
6. I avoid embarrassment.	1	2	3	4	5
7. I am distressed by sweating.	1	2	3	4	5
8. I avoid parties.	1	2	3	4	5
9. I avoid being the center of attention.	1	2	3	4	5
10. I fear talking to strangers.	1	2	3	4	5
11. I avoid speeches.	1	2	3	4	5
12. I avoid criticism.	1	2	3	4	5
13. I am distressed by heart palpitations.	1	2	3	4	5
14. I have a fear of others watching me.	1	2	3	4	5
15. I have a fear of embarrassment.	1	2	3	4	5
16. I avoid talking to authority figures.	1	2	3	4	5
17. I am distressed by trembling or shaking.	1	2	3	4	5

**POSITIVE BELIEFS ABOUT POST-EVENT PROCESSING QUESTIONNAIRE
(PBPEPQ)**

Instructions: Consider your recent social interactions, including interactions with friends, other students, coworkers, and authority figures (including bosses and teachers) over the past few weeks. Many people think about these interactions after they happen. Below are some possible reasons that may motivate you to think about these interactions. Please indicate the degree to which each of the items below motivates you to think about past social interactions.

I think about previous social interactions...	<i>Do Not</i>			<i>Agree</i>
	<i>Agree</i>			<i>Very</i>
				<i>Much</i>
1. To know if I did something embarrassing.	1	2	3	4
2. To know if made a fool of myself.	1	2	3	4
3. To know if I made a good impression.	1	2	3	4
4. To know if I offended anyone.	1	2	3	4
5. To know if I impressed anyone.	1	2	3	4
6. To know if I sounded intelligent.	1	2	3	4
7. To know if there is something I should have said.	1	2	3	4
8. To know if there is something that I should not have said.	1	2	3	4
9. To know if others think I am weird or odd.	1	2	3	4
10. To know if others think I am likable.	1	2	3	4
11. To know if I said something stupid.	1	2	3	4
12. To know if others thought my jokes were funny.	1	2	3	4
13. To know if my actions would stop me from fitting in with others.	1	2	3	4
14. To know if I was wearing the wrong thing.	1	2	3	4

15. To know if I gave too much personal information too soon.	1	2	3	4
16. To know if there was something wrong with my body language (e.g., did I stand too close or not make enough eye contact).	1	2	3	4
17. To know if I hurt someone's feelings.	1	2	3	4
18. To know if I was too quiet.	1	2	3	4
19. To understand which situations trigger my social fears.	1	2	3	4
20. To understand my mistakes and failures in social situations.	1	2	3	4
21. To find the causes for my social fears.	1	2	3	4
22. To think of a better way to interact with others in the future.	1	2	3	4
23. To avoid saying something wrong in the future.	1	2	3	4

POST-EVENT PROCESSING QUESTIONNAIRE-REVISED (PEPQ-R)

Instructions: During the past few weeks, have you experienced anxiety in a social situation (such as at a party, public speaking, dating, etc.)? If yes, than please answer the questions below.

Part I:

	<i>None at All</i>			<i>A lot</i>
1. How much anxiety did you experience?	1	2	3	4

Part II:

	<i>Not at all</i>			<i>Very Much</i>
2. After the event was over, did you find yourself thinking about it a lot?	1	2	3	4
3. Did your memories and thoughts about the event keep coming into your head even when you did not wish to think about it again?	1	2	3	4
4. Did the thoughts about the event ever interfere with your concentration?	1	2	3	4
5. Were the thoughts/memories about the event ever welcome to you?	1	2	3	4
6. Did you find it difficult to forget about the event?	1	2	3	4
7. Did you try to resist thinking about the event?	1	2	3	4
8. If you did think about the event, over and over again, did your feelings about the event get worse and worse?	1	2	3	4
9. If you did think about the event, over and over again, did your feelings about the event get better and better?	1	2	3	4
10. While thinking about the event I viewed it from my point of view.	1	2	3	4
11. While thinking about the event I viewed it from another person's point of view.	1	2	3	4

- | | | | | |
|--|---|---|---|---|
| 12. Did you ever wish that you could turn the clock back and re-do it and not just do it again, but do it better? | 1 | 2 | 3 | 4 |
| 13. As a result of the event, do you now avoid similar events; did this event this reinforce a decision to avoid similar situations? | 1 | 2 | 3 | 4 |
| 14. Did you ever wonder about whether you could have avoided or prevented your behavior/feelings during the event? | 1 | 2 | 3 | 4 |

POSITIVE BELIEFS ABOUT RUMINATION SCALE (PBRs)

Instructions: Most people experience depressive thoughts at times. When depressive thinking is prolonged and repetitive it is called *ruminatio*n. This questionnaire is concerned about the beliefs that people have about rumination. Listed below are a number of these beliefs. Please read each belief carefully and indicate how much you *generally* agree with each one. Please circle the number that best describes your answer. Please respond to all of the items.

	<i>Do not agree</i>			<i>Agree very much</i>
1. In order to understand my feelings of depression I need to ruminate about my problems	1	2	3	4
2. I need to ruminate about the bad things that have happened in the past to make sense of them	1	2	3	4
3. I need to ruminate about my problems to find the causes of my depression	1	2	3	4
4. Ruminating about my problems helps me to focus on the most important things	1	2	3	4
5. Ruminating about the past helps me to prevent future mistakes and failures	1	2	3	4
6. I need to ruminate about my problems to find answers to my depression	1	2	3	4
7. Ruminating about my feelings helps me to recognise the triggers for my depression	1	2	3	4
8. Ruminating about my depression helps me to understand past mistakes and failures	1	2	3	4
9. Ruminating about the past helps me to work out how things could have been done better	1	2	3	4

META-COGNITIONS QUESTIONNAIRE (MCQ-30)

Instructions: Rate each of the following statements on a scale of 1 (“do not agree”) to 5 (“agree very much”). Please do not leave any items blank.

	<i>Do not agree</i>			<i>Agree very much</i>
1. Worrying helps me to avoid problems in the future.	1	2	3	4
2. My worrying is dangerous for me.	1	2	3	4
3. I think a lot about my thoughts.	1	2	3	4
4. I could make myself sick with worrying.	1	2	3	4
5. I am aware of the way my mind works when I am thinking through a problem.	1	2	3	4
6. If I did not control a worrying thought, and then it happened, it would be my fault.	1	2	3	4
7. I need to worry in order to remain organized.	1	2	3	4
8. I have little confidence in my memory for words and names.	1	2	3	4
9. My worrying thoughts persist, no matter how I try to stop them.	1	2	3	4
10. Worrying helps me to get things sorted out in my mind.	1	2	3	4
11. I cannot ignore my worrying thoughts.	1	2	3	4
12. I monitor my thoughts.	1	2	3	4
13. I should be in control of my thoughts all of the time.	1	2	3	4
14. My memory can mislead me at times.	1	2	3	4
15. I will be punished for not controlling certain thoughts.	1	2	3	4
16. My worrying could make me go mad.	1	2	3	4

17. I am constantly aware of my thinking.	1	2	3	4
18. I have a poor memory.	1	2	3	4
19. I pay close attention to the way my mind works.	1	2	3	4
20. Worrying helps me cope.	1	2	3	4
21. Not being able to control my thoughts is a sign of weakness.	1	2	3	4
22. When I start worrying, I cannot stop.	1	2	3	4
23. Worrying helps me to solve problems.	1	2	3	4
24. I have little confidence in my memory for places.	1	2	3	4
25. It is bad to think certain thoughts.	1	2	3	4
26. I do not trust my memory.	1	2	3	4
27. If I could not control my thoughts, I would not be able to function.	1	2	3	4
28. I need to worry in order to work well.	1	2	3	4
29. I have little confidence in my memory for actions.	1	2	3	4
30. I constantly examine my thoughts.	1	2	3	4

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Vita

Education

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Research Experience

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Teaching Assistantships

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Research Methods, University of North Florida, Professor Dr. Juliana Leding, 2011

Statistical Data Analyst

PASW's SPSS analysis of Bonner member survey data, The Bonner Foundation, Indiana University-Purdue University and Walden University, January-May 2011

Presentations

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Extra-Curricular Work

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Affiliations

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American Psychological Association Student Affiliate, 2009-

Honors and Awards

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Florida Bright Futures Scholarship, 2006-2010

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The National Dean's List, 2006-2008