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Exploring Perfectionism, Rumination and Social Anxiety: Theoretical and Causal Implications

Jaclyn R. Brown
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EXPLORING PERFECTIONISM, RUMINATION AND SOCIAL ANXIETY:
THEORETICAL AND CAUSAL IMPLICATIONS

by

Jaclyn R. Brown

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Hons. B.A., University of Windsor, 2008

Submitted to the Department of Psychology/Faculty of Science in partial fulfillment of
the requirements Master of Arts, Psychology

Wilfrid Laurier University
2011

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Abstract

Clark and Wells' (1995) cognitive model of Social Anxiety (SA) posits that those with SA have a strong fear of negative evaluation and engage in excessive rumination following social interactions or performances. Fear of negative evaluation is also a key component of perfectionism; perfectionism has also been correlated with rumination. The purpose of the research was to examine the relationships among SA, rumination and perfectionism across two studies. For Study 1, participants were recruited ($N = 232$) to complete online questionnaires. Psychometrics, including factor structure, were examined. It was expected that SA and rumination, rumination and perfectionism, and SA and perfectionism would be significantly and positively correlated. It was also expected that rumination would act as a mediator between SA and perfectionism. These hypotheses were supported. For Study 2, socially anxious students ($N = 101$) completed two parts. At Part 1, rumination, SA, and perfectionism were assessed, participants delivered a 3 minute speech, were randomly placed in a rumination, distraction, or control condition, and then state anxiety and perfectionism were assessed. Post-event rumination was assessed two days later (Part 2). It was hypothesized that those in the rumination condition would report the highest state anxiety and perfectionism at Part 1, and at Part 2, the highest post-event rumination. It was also expected that state perfectionism at Part 1 would be significantly and positively correlated with post-event rumination at Part 2. Those in the rumination and control conditions reported significantly more state anxiety than those in the distraction condition, and state perfectionism was positively correlated with post-event rumination. There were no significant differences across conditions on state perfectionism or post-event rumination. Limitations and implications are discussed.

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Exploring Perfectionism, Rumination and Social Anxiety: Theoretical and Causal Implications

Social anxiety (SA) can negatively impact individuals' lives on a daily basis, typically occurring prior to, during, and even after social interactions. It is characterized as anxiety brought on by unwarranted fears of negative evaluation or judgments from others while interacting, along with concerns over making mistakes, and worrying about being embarrassed. A key feature in the maintenance of SA is rumination or post-event processing (PEP). Rumination is a form of repetitive and unproductive thinking following an event that can also cause anticipatory anxiety for future social interactions. It is often discussed as a relentless drive to re-evaluate social events in detail. According to Clark and Wells (1995), those who ruminate will tend to reflect on previous social interactions, remembering both neutral and negative aspects, as negative. Rumination also limits an individual's ability to attend to anything outside of their negative mood or self-criticisms, and is typically coupled with feelings of humiliation and increased self awareness.

SA has also been related to perfectionism (Alden, Ryder, & Mellings, 2002). Some aspects of perfectionism include maintaining high expectations of the self, high expectations of others, or perceived high expectations of the self imposed from others. In addition, perfectionism involves concerns over making mistakes, issues with organization, doubting one's own actions, a preoccupation with self appraisal, and an increased likelihood to engage in self criticism. These latter aspects of perfectionism relate especially well to characteristics of SA (Alden et al., 2002).

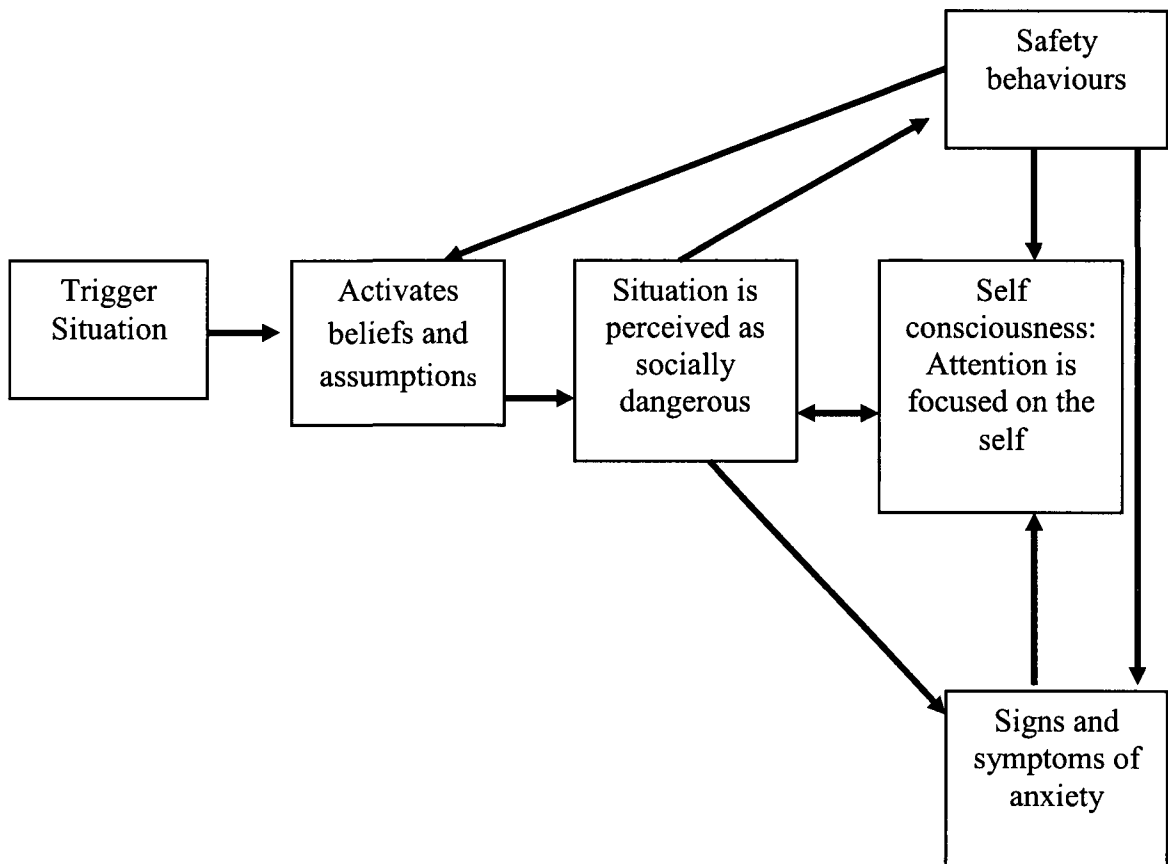
Given that SA can be such a pervasive issue, developing the most effective treatments for this disorder is a constant goal of researchers. As such, the more that researchers know about what variables play contributing or maintenance roles regarding SA, the sooner that treatments can be tailored to effectively meet clients' needs. Thus, it is the goal of this research to provide additional insight on the role that rumination and perfectionism might play for those who are socially anxious.

Social Anxiety

Social anxiety is believed to be a common issue, and failure to seek treatment, which is likely related to the nature of the disorder, has made finding a valid prevalence of social anxiety disorder difficult. Nevertheless, according to Statistics Canada (2002), data collected from the Canadian Community Health Survey was utilized to report that, "just over 2 million Canadians ages 15 or older had a "lifetime history" of a social anxiety disorder...[and] approximately 750,000 people (3%) currently had the disorder" (p. 48). Interestingly, yet inconsistent with previous research that has found social anxiety disorder to be relatively consistent across genders, Statistics Canada reported that women were slightly more likely to report a current social anxiety disorder than men. In addition to these findings, Statistics Canada also reported that unmarried individuals were more likely to report struggling with social anxiety than married individuals.

According to the Clark and Wells (1995) cognitive model of social anxiety (see Figure 1), individuals who struggle with social anxiety/phobia have a difficult time interacting with others, without over-focusing on their own behaviours. This anxiety can arise for both social interactions and performance situations. Often, socially anxious people will express feeling unaccepted and they will report their own behaviours as inept,

Figure 1. Clark and Well's (1995) Cognitive Model of Social Anxiety



or as having grave consequences. Socially anxious individuals also commonly report feelings of rejection, loss of status, and negative self worth (Clark & Wells, 1995).

Once an individual has perceived a situation as socially threatening, there are a series of consequences to follow. According to Clark and Wells (1995), socially anxious people will move through a set of progressions related to their anxiety. First, they are said to become concerned with their physical bodily responses to anxiety. This is followed by problems with processing further social cues, and due to these issues with processing social cues, this leads to more behavioural symptoms that produce further anxiety sensations, like speaking rapidly or perspiring. Based on the overt behaviours and bodily responses from SA, those with SA are likely to fear negative evaluation from others, yet it is because of the bodily responses to the SA, that in social situations, others might be apt to grant someone with this disorder a negative evaluation.

Perfectionism

Perfectionism as a trait has been discussed heavily in personality psychology literature, and although it can be an adaptive trait (e.g., intrinsically motivated to set personal goals for success), perfectionism is more frequently discussed as maladaptive. More commonly, perfectionism is discussed as the by-product of other social/personal issues, or related to various forms of psychopathology. Additionally, when perfectionism has been discussed, researchers have most commonly referred to two main conceptualizations of the trait: Frost, Marten, Lahart, and Rosenblate's (1990) multidimensional model (six subscales) of perfectionism (see Figure 2A.) and Hewitt and Flett's (1991a) three faceted model of perfectionism (see Figure 2B.).

Figure 2A. Perfectionism Subscales - FMPS

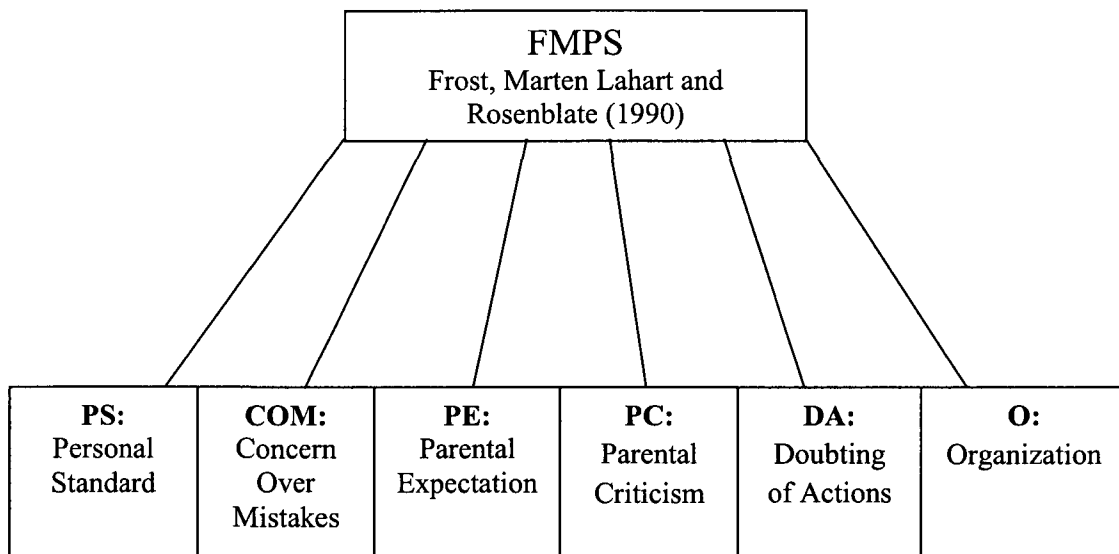
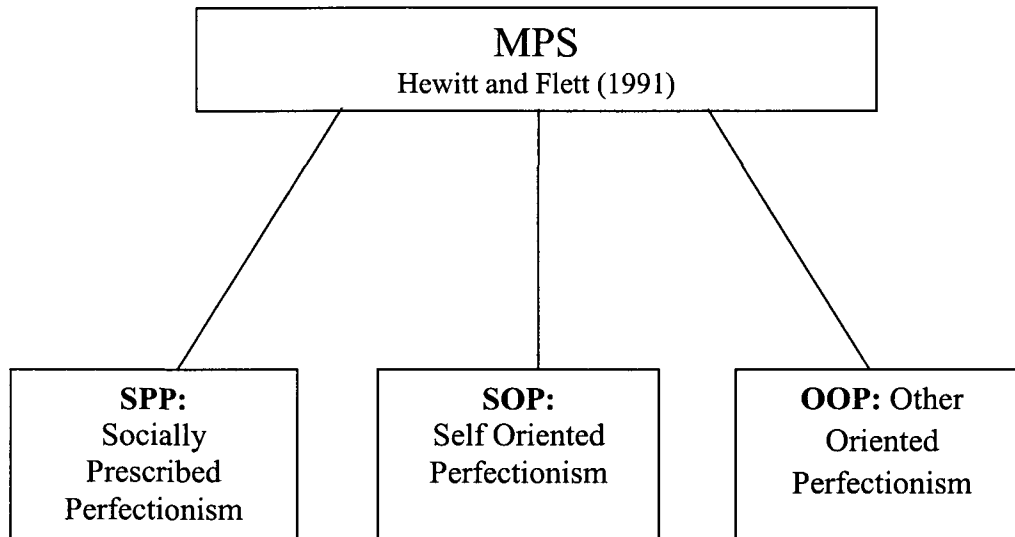


Figure 2B. Perfectionism Facets - MPS



Frost and colleagues (1990) sought to create an assessment of perfectionism (Frost Multidimensional Perfectionism Scale), by conducting a series of factor analyses to better determine what beliefs, qualities, traits, and aspects of personality, comprise the trait of perfectionism. Their analyses examined a large number of items from pre-existing perfectionism scales, as well as several items that were created to assess dimensions of perfectionism commonly reported in perfectionism literature. Upon completing these factor analyses, Frost et al. (1990) arrived at a six subscale measure of perfectionism: personal standards (PS), concern over mistakes (COM), parental expectations (PE), parental criticisms (PC), doubting actions (DA) and organization (O). According to Frost and colleagues, PS was described as high self set expectations. COM was defined as commonly interpreting errors as failures, believing that failure will lead to a loss of respect from others, and experiencing negative responses to making a mistake. PE was conceptualized as believing that tasks will not be completed or will not satisfy prescribed parental expectations and PC was defined as criticisms from parents. DA was defined as never feeling quite satisfied with a task or presented work and lastly, O was defined as an extreme preference for order. These six subscales, which for the most part are highly intercorrelated, are what Frost and Colleagues deemed as key components of perfectionism. With this scale, individuals can be scored on each particular subscale, as well as receive a total perfectionism score.

However, it is important to note that although Frost and colleagues (1990) noted six defined subscales or factors that comprise this scale and the trait of perfectionism, there has been some research that contradicts this claim. For example, Stöber (1998) conducted factor analyses on this scale (FMPS), and noted that there were four and not

six factors (concern over mistakes and doubting actions, parental expectation and parental criticisms, personal standards, and organization) to this measure. Other researchers have also found support for fewer than six factors. Purdon, Antony, and Swinson (1999) deemed a three-factored solution as a better fit for the scale, while more recent research by Harvey, Pallant, and Harvey (2004) found support for a four-factored solution.

Overall, although there are some contradictions in the literature regarding the factor structure of this scale, the FMPS appears to be a valid and useful tool to assess perfectionism. In fact, it has also been noted as a useful tool when researching perfectionism and SA. Antony, Purdon, Huta, and Swinson (1998) discussed the FMPS as a valid and suitable measure to use when examining perfectionism with SA, given that the FMPS maintains qualities which connect well with aspects of SA (fears of performance evaluation or social interactions). Thus, it is more commonly used with social phobia research than other perfectionism scales.

The other commonly referred to school of thought on perfectionism is a three faceted framework of perfectionism by Hewitt and Flett (1991a, 1991b). According to Hewitt and Flett (1991a), perfectionism can be subcategorized into three main but different facets, where individuals can be assessed as scoring high, low, or average in each category. No total perfectionism score can be assigned, as each facet of perfectionism is designed to assess a distinct dimension of this trait. The first facet of Hewitt and Flett's perfectionism is other oriented perfectionism (OOP). Individuals who demonstrate OOP characteristics tend to establish "unrealistic standards for significant others, place importance on other people being perfect, and stringently evaluate others' performance" (Hewitt & Flett, 1991a, p. 457). These individuals expect a lot from those

around them. A second type of perfectionism is self oriented perfectionism (SOP). SOP involves motivations like, “striving to attain perfection in one's endeavors, as well as striving to avoid failures” (Hewitt & Flett, 1991a, p. 457). This type of perfectionism is often viewed as adaptive, typically because these types of individuals will set high goals and expectations for themselves based on their own internal drives, and not based on validation from others or what they perceive others have imposed on them. Lastly, the third type of perfectionism defined by Hewitt and Flett is socially prescribed perfectionism (SPP). SPP can be defined as a “perceived need to attain standards and expectations prescribed by significant others” (Hewitt & Flett, 1991a, p. 457). In general, at extremes SPP is viewed as maladaptive, since people with SPP tendencies feel an extreme pressure to do well, based on a belief that others maintain very high expectations of them. Falling short of these prescribed expectations would result in negative evaluations from significant peers.

Perfectionism and Social Anxiety

Previous research has shown that SA and perfectionism are related, however there are differences in opinion among researchers regarding proposed directions of causality. To date, much of the research that has examined SA and perfectionism has been correlational, thus, no definitive claims can be made. Nonetheless, some researchers have postulated that perfectionism may lead to elevated SA, while other researchers have postulated that SA may lead to elevated perfectionism. The following review will provide evidence that these variables are related, and will then discuss some of the research that has predicted directions of causality.

Bieling, Summerfeldt, Israeli, and Antony (2004), noted that perfectionism (assessed via the FMPS and MPS) was found to be comorbid with several psychological mood and anxiety Axis I diagnoses, but specifically, perfectionism was related to social anxiety disorder. Thus, it is the aim of this present research to determine why this relationship between SA and perfectionism exists, but more importantly, what this relationship between SA and perfectionism means for those with social anxiety disorder.

There has been research examining the relationship between SA and perfectionism as well as SA and specific facets or subscales of perfectionism. For example, Juster, Heinberg, Frost, Holt Mattia, and Faccenda (1996) found that participants with social phobia had higher overall perfectionism scores on Frost's Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990), compared to non-socially anxious community volunteers. Also, compared to the sample of community volunteers, people with social phobia reported more concern over mistakes (CM) and were increasingly likely to doubt their performance (DA).

Additional literature that has compared SA to specific aspects of perfectionism has noted that components of socially prescribed perfectionism (SPP) (maintaining beliefs that others have unusually high expectations or standards for oneself), are not just characteristic of perfectionists, but are also characteristic of both depressed and socially anxious people (Hewitt & Flett, 1991a).

Alden, Ryder, and Mellings (2002) also discussed relationships between SA and specific facets of perfectionism, by noting common aspects, such as a preoccupation with the self and increased self appraisal or self criticisms as both common for perfectionists and those with SA. Alden et al. (2002) also went on to note that SA arises if individuals

perceive a mismatch between their social performance and the expectations that others hold them to. This finding directly connects SA, not only to the general trait of perfectionism, but more specifically to socially prescribed perfectionism (SPP); those with SPP are concerned with meeting perceived expectations that are prescribed from others. It might be possible then, that since SPP has been positively correlated with negative affect, anxiety and depression (Hewitt & Flett, 2004), an individual with elevated levels of SPP who is also socially anxious will experience increased SA as compared to someone who is socially anxious with lower levels of SPP.

Further research on SA and specific facets of perfectionism was conducted by Saboonchi and Lundh (1997) who reviewed SA and the three facets of perfectionism from Hewitt and Flett's (1991a) Multidimensional Perfectionism Scale (SPP, OOP, and SOP). They found that SPP and SA were significantly correlated ($r = .40, p < .01$, to $r = .59, p < .001$) while OOP and SOP were not significantly correlated with SA. Given the significant correlation between SA and SPP, it would be helpful to consider how SPP impacts SA, or how SA might impact perfectionism in a causal fashion. It would also be helpful to consider how a third variable might be simultaneously impacting the existing relationship between these variables (SA and perfectionism).

Moreover, Wu and Wei (2008) found support for a connection between SA and a construct that is very similar to SPP, named evaluative concern (EC). Evaluative concern (EC) perfectionism was defined by Blankstein and Dunkley (2002) as a maladaptive type of perfectionism that is strongly correlated with negative mood, anxiety and a need for reassurance from others. EC perfectionism is similar to SPP, whereby individuals are said to maintain a desire to do well, to meet others' prescribed standards. Although Wu

and Wei did not predict a specific direction for this relationship, they noted that EC (similar to SPP) and SA were significantly and positively related.

Looking at perfectionism in relation to SA while proposing a causal direction, Alden, Bieling, and Wallace (1994), examined self assessments, personal goals, and personal standards. Socially anxious females were required to rate themselves on a series of items such as personal standards, standards set by others, personal ability and frequency of self appraisal. Alden et al. (1994) also examined aspects of perfectionism through a social task, as well as by scores of perfectionism on the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991a). Results indicated that the self-oriented type of perfectionism (SOP) was directly related to discrepancies and reported importance between self efficacy and meeting personal standards. Self regulation was directly related to socially prescribed perfectionism (SPP), in the sense that the more they believed others expected from them, the more they evaluated themselves. Based on this finding, it appears that Alden and colleagues are suggesting increased SA and increased SPP leads to more evaluative thoughts (similar to rumination).

Suggesting a model somewhat different from what Alden and colleagues (1994) predicted in the previous study (increased SPP in socially anxious individuals potentially leads to more rumination), Juster Heinberg, Frost, Holt Mattia, and Faccenda (1996) proposed that increased perfectionism might lead to increased SA. Specifically Juster et al. (1996) noted correlations among perfectionism and SA, and based on these relations, they proposed a theoretical model to account for such a link. Juster and colleagues suggested that individuals with perfectionist beliefs are at a predisposition to anticipate negative outcomes or consequences of their own or others' actions. To test this, Juster

and colleagues conducted hierarchical regressions for both a SA group and a control group, noting that for the SA group, doubting actions (DA), concern over mistakes (COM) and personal standards (PS) perfectionism subscales were significant predictors of SA above and beyond depression and other forms of psychopathology. Juster and associates attributed these results as support for their proposed model that SA and perfectionism are linked, and that it is perfectionist beliefs that cause those with SA to overvalue the importance of mistakes. Given Juster and associates' research suggesting that perfectionism is predictive of increased SA, it makes sense to further examine the dynamic of this relationship and consider other variables that might increase or impact perfectionism in those with SA. Since rumination is a characteristic of SA and has also been correlated with perfectionism, it could be possible that rumination immediately following an anxiety inducing event is affecting or bringing to attention individuals' perfectionist beliefs, or thoughts, which in turn is impacting anxiety.

Moving to yet another theorized model regarding the relation between SA and perfectionism, Laurenti, Bruch, and Haase (2008) investigated the joint role of SA and SPP on participants' appraisal of an interpersonal situation. Participants' SA and perfectionism (MPS' three facets) were assessed in lab, prior to participants being informed of an upcoming interaction where they would be required to interrelate with a member of the opposite sex. Participants were also required to rate their self perception and their perceptions of others pertaining to this upcoming interaction. Results from this study showed that participants with increased SA and SPP reported increased negative thoughts following an interaction, even more so than those high in SA, but lower in SPP. Based on this research, if perfectionism is increasing negative thoughts for those with SA

following an anxiety provoking situation, again, it might be valuable to consider a third variable that could be influencing perfectionism. For example, rumination is a known by-product of SA. If people with SA are ruminating more, this may bring perfectionist traits or beliefs to attention, thus focusing individuals' attention on perceived inadequacies or shortcomings, causing more distress.

Additional research that lends some support to examine a third variable in relation to SA and perfectionism is found in the work of Ashbaugh, Antony, Summerfeldt, McCabe, and Swinson (2007). They wanted to determine if treating SA with Cognitive Behavioural Therapy (CBT) would consequently impact participants' reporting of COM. Following CBT, Ashbaugh et al. (2007) found a significant decrease in participants' SA mean scores, essentially noting that most participants went from reporting clinical levels of SA, to more average or non-clinical levels of SA. They also noted a decrease in individuals' total scores on the FMPS (overall perfectionism), as well as a mean decrease in concern over mistakes (COM) and doubting actions (DA) subscales. Although this research supports the use of CBT to treat SA, it does not specifically account for how, why, or which aspects of CBT were responsible for participants reporting decreased perfectionism scores following the treatment. As such, it should be the goal of future research to determine how and under what circumstances perfectionism can be decreased for those with SA. Additionally, it is possible that CBT is causing a decrease in a related variable (e.g., rumination) which in turn is resulting in decreased perfectionism.

Rumination or Post-Event Processing

In the context of social anxiety, rumination is broadly viewed as a form of repetitive and unproductive thinking which follows an event. According to Lyubomirsky

and Nolen-Hoeksema (1995) rumination is a way to deal with negative affect that encompasses self-focused attention. It is a past oriented, counterproductive form of self-reflection, involving reoccurring focus on negative emotions. Although individuals may engage in rumination tendencies/behaviours following different situations, according to Rood, Roelofs, Bogels, Nolen-Hoeksema, and Schouten (2009), rumination is particularly associated with depression, worry, and anxiety. This claim has also been supported by Flett, Madorsky, Hewitt, and Heisel (2002) who noted that increased rumination was associated with increased reporting of general depression, general anxiety, and anxiety arousal. Rumination is also said to be associated with less proactive behavior, higher separation from solving problems, and an increased negative state of mind (Lyubomirsky & Nolen-Hoeksema). More generally speaking, rumination can be referred to as brooding, a needless sense of dwelling on circumstances without solving a problem, resulting in negative mood and increased anxiety.

Within the social anxiety literature, a term synonymous for rumination is Post Event Processing (PEP). According to Clark and Wells (1995), this is a maladaptive tendency following social situations or performance tasks that provokes anxiety. It is coupled with feelings of humiliation and increased self awareness. According to Clark and Wells (1995), those with SA engaging in PEP or rumination, will tend to recall more negative than positive memories following a social interaction, as well as maintain an increased likelihood of attributing negative tones to ambiguous social exchanges. Additionally, PEP is coupled with anticipatory anxiety: anxiety that arises before future social interactions or performances, stemming from recollections of previous interactions or performances. Since PEP results in individuals recalling negative memories from

previous social interactions, this might prime them to feel anxious for future interactions.

PEP then leaves socially anxious people to feel an increased belief that conveying themselves in a desirable manner to unfamiliar others is impossible.

In support of the aforementioned research on PEP, Dannahy and Stopa (2007) examined differences in thought processes of high and low socially anxious persons, to determine how knowledge interpretation and knowledge modifications impacted the outcome of thought processes. Dannahy and Stopa hypothesized that high socially anxious individuals would engage in more PEP than low socially anxious persons and that they would make predictions that their performance in social interactions would be poorer than low SA persons. This study found support that participants with high SA rated their performance in social situations as poorer than participants with low SA did, possibly due to thought modifications or misinterpretations of their own performance. In addition, high SA participants reported more PEP right after the social interaction task, and even one week following the social interaction, compared to low SA participants.

Moving on, as it was previously stated, SA can arise from both social interactions and performance tasks; there has been research examining PEP for both of these instances. Research examining PEP for social interactions conducted by Fehm, Schneider, and Hoyer (2007) revealed that PEP following social interactions was strongly predicted by fear of negative evaluation. To come to this conclusion, their study sought to determine if PEP was specific to social anxiety following social situations, or if PEP was also related to other anxiety situations (e.g., specific phobia situations, unfair situations). They noted that PEP was in fact related to both social anxiety and social situations; however, PEP following social situations was best predicted by a fear of

negative evaluation. Based on the results from this specific study, Fehm and colleagues suggested that PEP following an event is best predicted by fear of negative evaluation, and this was in turn predictive of future PEP for similar social situations.

As previously mentioned, self focused attention is one element of rumination or PEP. In an attempt to examine the impact of self focused attention as a separate aspect from rumination, Spasojevic and Alloy (2001) conducted a study examining rumination as a mediating variable between SA and cognitive occurrences (positive or negative thoughts). They found that even after controlling for depression, rumination was associated with negative cognitive styles. After removing the effects of private self consciousness (a dispositional tendency to have an increased self focus) to determine if rumination apart from self focused attention, would still be related to negative cognitive occurrences, Spasojevic and Alloy found just that. Rumination itself was still significantly related to negative cognitive occurrences. Accordingly, this particular study carries importance, because as previously mentioned, rumination and SA are strongly related and have been noted to impact one another, yet much of the literature states that a very large part of rumination for those with SA is self focused attention. This particular study provides support that rumination even outside of the effects of self focused attention is still a variable of concern for those with SA.

More recent research on post-event processing has connected changes in PEP and metacognitions (knowledge about one's own thought processes and thought systems) (Zohar & David, 2009), following Cognitive Behavioral Group Therapy (CBGT). McEvoy, Mahoney, Perini, and Kingsep (2009) examined this phenomenon by providing a sample of clinically diagnosed social phobics with CBGT and evaluated

metacognitions, depression, and PEP tendencies. Following CBGT, McEvoy and colleagues found that, similar to previous research, when there was a decrease in PEP, there was also a noted decrease in SA symptoms. Also, McEvoy et al. (2009) found that following CBGT, scores on all of the metacognition subscales (positive beliefs about worrying, negative beliefs about lack of control, cognitive self-consciousness, negative beliefs concerning the consequences of not controlling thoughts, and cognitive confidence) but positive beliefs about worrying (e.g. worrying helps me cope) had been significantly reduced. These decreases in negative metacognitions were related to decreased SA symptoms and depression. This particular study then, suggests further support that SA and rumination are connected. It seems that when therapy can reduce the severity and/or frequency of certain metacognitions (rumination), there was also a marked decrease in reported SA. This is important to note because if rumination is increasing SA, it is also possible it may be increasing perfectionism, or rumination may even be mediating the relationship between these two variables.

Rumination/PEP and Perfectionism

Similar to how researchers differed on directional predictions of causality regarding SA and perfectionism, the same situation is present in the rumination and perfectionism literature. The subsequently discussed research will highlight some of these predictions. Upon examining perfectionism and rumination, Treynor and Nolen-Hoekesma (2003) discussed individuals who are likely to ruminate, and noted that people who are chronically stressed and do not feel like they are capable of performing well in areas of their lives are more likely to ruminate than control groups. As many of these

descriptors relate well to characteristics of perfectionism, it might be that perfectionism predisposes people to be more apt to ruminate.

Somewhat opposite from the aforementioned study, Flett, Hewitt, Blankstein, and Gray, (1998) conducted research whereby their results suggest that it is possible for rumination to lead to increased perfectionism. Specifically, Flett and colleagues looked at whether person by person differences existed in ruminative processes based on a tendency of perfectionist thinking and psychological distress. They found that individuals who engaged in perfectionist thoughts more frequently experienced an increase in psychological distress. They also found that a higher frequency of perfectionist thoughts and rumination was associated with general depression, arousal and anxiety. When Flett et al. (1998) controlled for levels of rumination they found that increased perfectionism (SPP and SOP) was no longer significantly related to psychological distress. To relate these results to variables in the present research, if rumination is responsible for a problematic link between perfectionism and psychological distress, rumination might be mediating the relationship between SA and perfectionism.

Looking at the relation between rumination and perfectionism in yet another way, Hill, Huelsman, Furr, Kibler, Vicente, and Kennedy (2004) not only suggested that these variables were related, but they proposed that rumination is a component of perfectionism. Hill et al. (2004) developed a perfectionism scale (The Perfectionism Inventory; PI) which consists of the following eight subscales: concern over mistakes, high standards of others, need for approval, organization, parental pressure, planfulness, striving for excellence and rumination. What is interesting about this measure, aside from its strong psychometric properties, and good convergent validity with other

perfectionism assessments, is that Hill et al. (2004) view rumination as a component of perfectionism, rather than a separate variable that is predictive or predicted by perfectionism. If this is the case (that rumination might be a component of perfectionism), then encouraging those with SA to ruminate following an anxiety inducing event, might also increase other perfectionist thoughts or beliefs.

Reducing SA: The Effects of Distraction

As previously discussed, CBT or CBGT are common treatments for reducing SA. Another technique outside of CBT that has received some attention to reduce SA is distraction. As such, Blagden and Craske (1996) examined the effects of distraction following an anxiety induction task. Their research suggested that actively encouraging individuals to distract, significantly reduced participants' reporting of anxiety, as well as the negative affect that is often coupled with anxiety when compared to participants who were not encouraged to distract. These results however, were only applicable for short term anxiety reduction and only when participants were encouraged to distract.

Kocovski, MacKenzie, and Rector (2011) examined the effects of rumination compared to distraction on post-event processing assessed via the Thoughts Questionnaire (Edwards, Rapee, & Franklin, 2003). This scale measures both positive thoughts (e.g., the event went smoothly) and negative thoughts (e.g., I made a fool of myself), with higher total scores denoting increased post-event processing. Kocovski and colleagues noted that although there were no significant differences between the distraction and rumination conditions on negative PEP thoughts, socially anxious participants in the distraction condition had significantly more positive PEP thoughts (one week later) than those in the rumination condition. Thus, although distraction

following an anxiety induction might not effectively reduce negative PEP some time after an event, it may help increase positive PEP which could counterbalance the effects of the negative PEP.

Further support for distraction as a viable technique in anxiety reduction, was noted by Lyubormirsky, Tucker, Caldwell, and Berg (1999). They examined rumination and other variables like dysphoria, in a way which suggests that rumination might act as a mediating variable between SA and perfectionism. Lyubormirsky and colleagues administered a cover-story to participants followed by a series of questionnaires, where participants were either left free to ruminate or were distracted from ruminating. Results showed that when participants ruminated as opposed to being distracted, they rated their problems as more severe and less solvable. Interestingly, there is a similarity between viewing problems as more severe and less solvable which is an outcome of rumination, and maintaining beliefs that a task or an assignment is impossible to do because of others' elevated expectations. Therefore, it is possible that for those with SA, rumination following a social interaction could also increase perfectionist beliefs or thoughts. Specifically, rumination might lead those with SA and perfectionism to focus more on their shortcomings, rendering their perceived inadequacies more apparent. Consequentially, it would be interesting to examine rumination as a mediating variable between SA and perfectionism.

Finally, a supplementary investigation that examined distraction as a technique to reduce SA was carried out by Kocovski, Endler, Rector, and Flett (2005). Kocovski and colleagues examined the effects of rumination and distraction on persons with SA through questionnaires. They found that those high in SA were more likely to ruminate,

or engage in PEP tendencies, than those with less social anxiety. Furthermore, those in the high SA category were less likely to use distraction as a technique to reduce their anxiety, compared to those with low SA. Based on previous research (Blagden & Craske, 1996 and Kocovski et al., 2005, Kocovski et al., 2011), distraction has been noted to temporarily reduce SA and increase positive post-event rumination, when substituted for rumination. However, socially anxious individuals might not be likely to engage in this technique when left to their own devices. Thus, although CBT and distraction have both shown some promise as beneficial treatments or strategies for SA reduction, further research on SA and rumination is necessary to determine other factors that might be contributing to anxiety, like perfectionism. Once other variables can be identified and understood, treatment of SA is likely to improve.

Present Research

Based on the research noted in previous sections, rumination and perfectionism have received some attention in the social anxiety literature and there are many theories as to how these three variables are actually related. Researchers have noted correlations between SA and perfectionism, SA and rumination, and perfectionism and rumination, (Juster et al., 1996; Clark & Wells, 1995; and O'Connor, O'Connor, & Marshall (2007, respectively), yet to date, research has not examined these three specific variables in one model. Thus, two studies were conducted in hopes of better understanding how SA, rumination, and perfectionism are related.

Study 1 sought to confirm as well as clarify some of what previous research has noted regarding correlations between SA and rumination, rumination and perfectionism, and SA and perfectionism, and it was also the aim of Study 1 to clarify some

contradictory evidence regarding factorial issues with the FMPS (1990). Specifically, Study 1 aimed to determine if the FMPS consists of the six factors that Frost et al. (1990) proposed, or if there are in fact fewer factors that comprise this measure of perfectionism. Furthermore, it was hypothesized that SA and rumination, rumination and perfectionism, and SA and perfectionism would be significantly and positively correlated. However in regards to the relation between SA and perfectionism, specific hypotheses were developed as the following facets and subscales of perfectionism have been consistently related to SA in the literature previously discussed. Thus, it was expected that SA would be positively related to: the facet of socially prescribed perfectionism (SPP), the concern over mistakes (COM) subscale, and the doubting actions (DA) subscale of perfectionism. Lastly, although there has been mixed theory regarding the direction of relationships among SA, rumination and perfectionism, for the present study it was hypothesized that rumination would mediate the relationship between SA and perfectionism. This hypothesis is based in part on the research of Flett et al. (1998) who found that a higher frequency of perfectionist thoughts and rumination was associated with general depression, arousal and anxiety, but when rumination was controlled for the relationships among perfectionism (SPP and SOP), and psychological distress became non-significant. Further support for this hypothesis (that rumination is mediating the relation between SA and perfectionism) is found in the work of Juster and colleagues (1996) who revealed that doubting actions (DA), concern over mistakes (COM) and personal standards (PS) perfectionism were significant predictors of SA above and beyond depression and other forms of psychopathology.

Relating evidence from these two studies to the present research, rumination (a known by-product of SA) could result in those with SA and perfectionism developing increased perfectionist thoughts that play a role in maintaining SA. Specifically, the more socially anxious a person is, the more he/she will ruminate about a past event and as a result the more salient or accessible any perceived inadequacies or shortcomings (due to perfectionism beliefs) might become. As a result, increased rumination could be increasing perfectionism. As such, for Study 1, a mediation model was proposed whereby SA would be the independent variable, rumination would be the mediating variable and perfectionism would be the dependent variable. It was hypothesized that higher levels of SA might lead to higher levels of rumination, which consequently might lead to higher levels of perfectionism.

The purpose of Study 2 was to continue examining perfectionism, SA and rumination; however in this study, the goal was to causally test some of these relationships. Study 2 aimed to test socially anxious participants and the effects of rumination immediately following an anxiety inducing event on state perfectionism, anxiety and post-event rumination two days later. Support for this idea is can be noted in Heimberg et al.'s (1995) research that involved a proposed model suggesting individuals with perfectionist beliefs may have a predisposition to anticipate negative outcomes or consequences of their own or others' actions. This anticipation of negative outcomes is very similar to rumination and the anticipatory anxiety that comes from it. Thus, it might be possible that rumination is not only a key characteristic of SA, but also of perfectionism.

Also previously mentioned, was the work of Ashbaugh and colleagues (2007). They noted that using Cognitive Behavioural Therapy (CBT) to decrease SA, subsequently decreased participants' overall scores on the Frost Multidimensional Scale (FMPS), as well as scores on the concern over mistakes (COM) and doubting actions (DA) subscales of the FMPS. Thus, it is possible that CBT was affecting a related variable of both perfectionism and SA (possibly rumination), which subsequently decreased reported SA scores, as well as perfectionism scores.

Lastly, is the aforementioned research of Dannahy and Stopa (2007), who noted that those with high SA tend to rate performances in social situations as poorer than those with low SA. They also noted that participants with high SA reported more PEP up to one week after a social interaction compared to low SA participants. Thus, it would be beneficial for the present research to examine the effects of rumination immediately following a social anxiety inducing event, and how these effects might influence perfectionism, or post-event rumination after some time has passed.

Therefore, the goal of Study 2 was to examine by experiment, how rumination impacts state anxiety, perfectionism and post-event rumination in a socially anxious sample. Part 1 of Study 2 focused on testing how rumination might impact state anxiety, and state perfectionism following an anxiety induction task. At Part 1, it was hypothesized that following the manipulation, participants in the rumination condition would report the highest scores out of the three conditions on state anxiety and state perfectionism. Based on the research of Kocovski et al. (2005) who noted participants will engage in rumination following an anxiety inducing event unless encouraged otherwise, it was also expected that those in the control condition would also report high

scores on state anxiety and perfectionism; however, these scores were anticipated to be lower than those who were in the rumination condition, but higher than those in the distraction condition. This expectation was also based on Kocovski and colleagues' results, in which there was support for distraction as an effective coping strategy for dealing with socially distressing events. Lastly at Part 1, it was expected that those in the distraction condition would report the lowest scores on state anxiety and perfectionism out of the three conditions.

For Part 2, Study 2 aimed to test the possible effects of rumination and state perfectionism at Part 1, on post-event rumination at Part 2. Similar to Study 1, for Study 2 it was hypothesized that SA and rumination, perfectionism and rumination, and SA and perfectionism would be positively correlated. However, different from Study 1, it was hypothesized that at Part 1 of Study 2, participants placed in one of three manipulation conditions (rumination, distraction and control) following an anxiety inducing event, would report different levels of state anxiety and state perfectionism. In particular, it was expected that those placed in the rumination condition at Part 1, would maintain the highest post-event rumination scores at Part 2, as compared to those in the control and distraction conditions. Those in the control condition were expected to have slightly lower scores on post-event rumination than those in the rumination condition, and those in the distraction condition were expected to report the lowest post-event rumination scores. Additionally, it was expected that state perfectionism scores at Part 1 would be significantly and positively related to post-event rumination scores at Part 2.

Study 1 – Examining the Relationships among Social Anxiety, Rumination and Perfectionism

This study examined the psychometrics of the main variables in the present research as well as the relationships among SA, rumination and perfectionism. It was hypothesized that the FMPS would maintain the original 6 factors which Frost and colleagues (1990) claimed, as opposed to some contradictory research noting 3 or 4 factors. It was also hypothesized that significant and positive relationships would be revealed between SA and rumination, rumination and perfectionism, and social anxiety and perfectionism. Lastly, it was also hypothesized that rumination might be acting as a mediating variable between SA and perfectionism; such that increased SA may lead to increased rumination, which consequently would lead to increased perfectionism.

Method

Participants

Participants consisted of undergraduate students from Wilfrid Laurier University who voluntarily read this study's research ad (see Appendix A), and chose to participate in this study via the online Psychology Research Experience Program (PREP). Participation was exchanged for course credit. There were 232 participants in total, of whom 56 were male and 176 were female. The majority of the sample identified as Caucasian (80.5%; $n=186$). Participants' ages varied from 18 to 40 years, with the majority (58%) falling between 18 and 19 years. More detailed demographic information is presented in Table 1.

Table 1.

Demographic Information

	Frequency (<i>N</i> =232)	Percent (%)
Gender		
Female	56	76%
Male	176	24%
Education		
Part of University	225	97%
Graduated College	4	1.5%
Graduated Undergrad	3	1.5%
Marital Status		
Single	212	91%
Married	2	.5%
Cohabiting	15	6.5%
Separated	1	.5%
Missing	2	.5%
Occupational Status		
Unemployed	3	1.5%
Employed FT	3	1.5%
Employed PT	6	3%
Student FT	204	88%
Student PT	14	6%
Missing	2	1%
Ethnicity		
White/ Caucasian	187	81%
Asian	29	12.5%
Other	8	3.5%
Missing	7	3%

Measures

Participants' personal history and/or background information was assessed through a series of questions surrounding race, education, academic major, socioeconomic status, family information, and religious beliefs (see Appendix B). The remaining measures used for this study included scales that assessed the personality trait of perfectionism, social anxiety, and rumination.

Multidimensional Perfectionism Scale. The trait of perfectionism was assessed using the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991a). The scale consists of 45 items, distributed over 3 subscales. MPS subscales include self oriented perfectionism (SOP; 15 items), other oriented perfectionism (OOP; 15 items), and socially prescribed perfectionism (SPP; 15 items), see Appendix C. According to Hewitt and Flett, SOP reflects high self set standards, OOP reflects high standards for close others and SPP reflects high standards set by others for oneself. Each item is based on a seven- point Likert Scale (1 to 7 = strongly disagree to strongly agree). MPS coefficient alphas reported in the past were .88, .74, and .81 respectively, for self oriented, other oriented and socially prescribed perfectionism (Flett 1991b). Based upon Hewitt and Flett's previous work, each of the three dimensions of the MPS are almost free of response biases, and maintain adequate reliability and validity (Hewitt & Flett, 1991a; 1991b).

Frost Multidimensional Perfectionism Scale. Perfectionism was also assessed by using the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). The scale consists of 35 items, generating overall perfectionism scores as well as scores for 6 subscales. For overall perfectionism scores, the minimum score is 35 and the maximum

score is 175; the higher the score, the greater the perfectionism. FMPS subscales include concern over mistakes (COM; 9 items), doubting actions (DA; 4 items), personal standards (PS; 7 items), parental expectations (PE; 5 items), parental criticism (PC; 4 items), and organization (O; 6 items) (Frost et al., 1990), see Appendix D. According to Frost et al. (1990) COM reflects an increased tendency to be self-critical. DA reflects the level of confidence or certainty about decision making. PS reflects higher self set standards. PE and PC reflect concerns about falling short of parental expectations as well as enduring criticisms from parents. O reflects an extreme preference for order. Participants respond to a five-point Likert Scale, (1 to 5= disagree to agree). Cronbach's alphas for the FMPS in the past were; COM= .88, PS= .83, PE= .84, PC= .84, DA= .77, O= .93, and according to Frost and colleagues, the entire FMPS yielded a reliability of .90.

Liebowitz Social Anxiety Scale. Social anxiety was assessed by using the Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987). This scale assesses a range of performance and social interactions which individuals may be fearful and anxious of and/or, which individuals may seek to avoid. This scale consists of 48 items, 24 assessing anxiety/fear for the interaction or performance situations on a 4-point Likert scale, (0 to 3 = *none, mild, moderate, severe*) and 24 items assessing avoidance of the same performance or social interaction situations on a four-point Likert scale (0 to 3= *never, occasionally, often, usually*), (see Appendix E). Total scores above 30 suggest some type of social anxiety, and scores below suggest no anxiety disorder. LSAS Cronbach's alphas reported in past research range from; .91 anxiety/fear, .92 avoidance, .89 social interaction, .85 performance (Baker, Heinrichs Kim, and Hofmann, 2002).

Baker and colleagues also reported good convergent validity with the social interaction anxiety scale (SIAS; Mattick & Clarke, 1998) and the social phobia scale (SPS; Mattick & Clarke, 1998). Also, according to Baker and colleagues, the LSAS had good test-re-test reliability.

Rumination and Reflection Questionnaire. Rumination tendencies were assessed using the Rumination and Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999). The scale consists of 24 items, distributed over two subscales. RRQ subscales include Rumination (12 items) and Reflection (12 items), however, only data on the rumination subscale was analyzed. See Appendix F. Each item is based on a five-point Likert Scale, (1 to 5 = strongly disagree to strongly agree), with overall higher scores, relating to increased rumination. Trapnell and Campbell also stated that the RRQ has good convergent reliability and reliability, along with coefficient alphas of .90 for rumination and .91 for reflection.

Procedure

Participants volunteered to take part in this online study via Wilfrid Laurier's Psychology's Research Experience Program - PREP system. First, participants were presented with an online consent form (see Appendix G). Next, participants were presented with a series of online questionnaires regarding demographics, and measures assessing anxiety, perfectionism and rumination. Once participants completed this study, they were presented with a printable online debriefing form (see Appendix H).

Results

Screening the Data

Data was screened for outliers (± 3 standard deviations from the mean) by examining boxplots and Z-scores for each scale and for every participant. Initially, there were 238 participants; however, after screening for outliers, data for 6 participants were excluded. Thus, 232 participants were used for subsequent analyses.

Analytic Strategy

Factor analyses were conducted to examine each of the perfectionism measures in an attempt to verify the factor structure. Next, reliability analyses and descriptive statistics were conducted for each measure. This was followed by bivariate correlations which were computed to assess the relationships among perfectionism (subscales and facets), rumination and social anxiety (for both performance and social interactions). Lastly, regressions were used to test the proposed mediation model and determine if there is support for the hypothesis that rumination would mediate the relationship between social anxiety and perfectionism.

Factor Analyses

Factor analysis of the FMPS was conducted as previous research has noted contradictory findings to the claims of Frost et al. (1990) who noted that the FMPS consists of six factors/subscales of perfectionism. Specifically, Stöber (1998) conducted factor analyses of the FMPS and noted that the FMPS has some factorial instability. Stöber suggested that the FMPS may be assessing more components of perfectionism than are necessary or present. Stöber's findings suggest that there are only four factors in the FMPS rather than six. The four factors Stöber noted are concerns over mistakes and doubting actions (CMD), parental expectations and criticism (PEC), personal standards (PS), and organization (O). Additional support for a four factored FMPS comes from

Harvey Watkins, Mansell and Shafran (2004), who suggested that the differences in perceived subscales may be arising from different samples of participants. Thus, factor analyses for the FMPS and the MPS were conducted to determine how many factors each scale of perfectionism is appropriate with this particular study's sample of participants. Principal components analysis (PCA) was used to determine whether items on the FMPS loaded on the expected six factors (DA, COM, O, PS, PE, and PC) that Frost et al. (1990) noted. The factor solution was limited to six factors and an oblique rotation (i.e., PROMAX in PASW/SPSS) was chosen, as these different subscales of perfectionism are correlated with one another. Lastly, as Tabachnik and Fidell (2007) suggested, only variables with factor loadings .32 and higher were reported. Firstly, it is important to note that as shown in Figure 3, there is a clear representation of four and not six factors. Furthermore, as presented in Table 2 and based on the eigenvalue greater than one rule, although six factors appear to be acceptable, when referencing Table 3, it becomes apparent that maintaining a six factored solution for the FMPS based on this principal is somewhat over extracted. In fact, Table 3 reveals that many of the FMPS' items are loading on multiple factors, and items are not clearly loading on the fifth and sixth factors as theoretically predicted. Thus, factor analyses were conducted a second time, with the factor solution limited to four. Shown in Table 4, items are no longer loading on multiple factors, rather a more clear depiction of factor loadings is revealed. In fact, excluding one item, (personal standards -"if I do not set the highest standards for myself, I am likely to end up a second rate person item") that has not loaded on any factor, Stöber's findings were replicated; (parental expectations/parental criticisms (PE/PC), organization (O), personal standards (PS), and doubting actions/concern over mistakes (COM/DA), see

Figure 3. Scree Plot: Factor Analysis of Frost's Multidimensional Perfectionism Scale

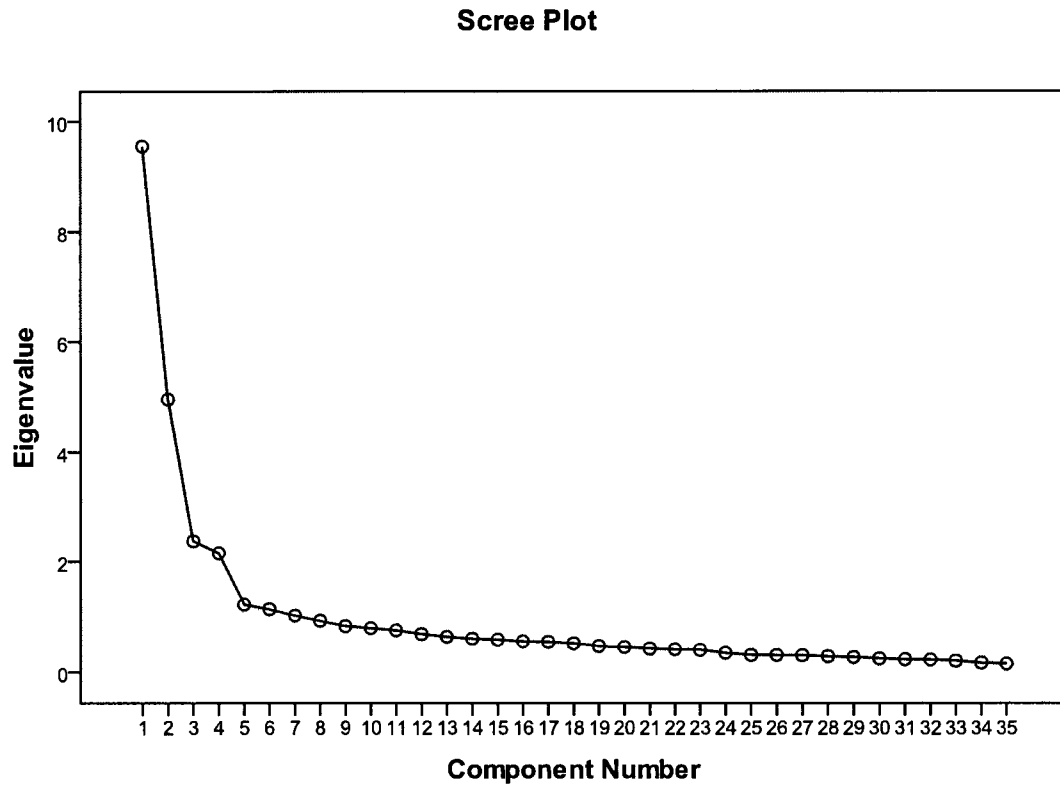


Figure 3. Frost (1990) Multidimensional Perfectionism Scale Scree Plot revealing four factors instead of six.

Table 2.

FMPS Total Variance: 6 Factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative	Total	% of Variance
1	9.551	27.289	27.289	9.551	27.289
2	4.957	14.164	41.452	4.957	14.164
3	2.369	6.770	48.222	2.369	6.770
4	2.151	6.147	54.369	2.151	6.147
5	1.222	3.492	57.861	1.222	3.492
6	1.137	3.247	61.108	1.137	3.247

Note. Total variance explained with six factors.

Table 3.

FMPS Factor Loadings Pattern Matrix with Oblique (PROMAX) Rotation: 6 Factors

Item No.		Rotated Coefficients for each Factor					
		1	2	3	4	5	6
1. PE	My parents set very high standards for me		.678				
11. PE	My parents want me to be the best at everything		.663				
15. PE	Only outstanding performance is good enough in my family		.838				
20. PE	My parents expect excellence from me		.746		.335		
26. PE	My parents have always had higher expectations for my future than I have			.861			
3. PC	As a child, I was punished for doing things less than perfectly		.615				
5. PC	My parents never try to understand my mistakes		.656				
22. PC	I never feel that I can meet my parents' expectations		.681				
35. PC	I never feel that I can meet my parents' standards	.329	.651				
2. O	Organization is very important to me			.725			
7. O	I am a neat person			.888			
8. O	I try to be an organized person			.853			
27. O	I try to be a neat person			.861			
29. O	Neatness is very important to me			.864			
31. O	I am an organized person			.861			
9. CM	If I fail at school, I am a failure as a person	.341					.515
10. CM	I should be upset if I make a mistake	.425					.585
18. CM	I hate being less than best at things.	.376			.564		
14. CM	If I fail partly, it is as bad as being a complete failure	.794					
13. CM	If someone does a task at school better than I do, then I feel as if I failed the whole task	.786					

21. CM	People will probably think less of me if I make a mistake	.567						.367
23. CM	If I do not do as well as other people, it means I am an inferior being	.749						
25. CM	If I do not do well all the time, people will not respect me	.675						
34. CM	The fewer mistakes I make, the more people will like me	.687						
17. D	Even when I do something very carefully, I often feel that it is not quite	.433						
28. D	I usually have doubts about the simple everyday things that I do	.524						
32. D	I tend to get behind in my work because I repeat things over and over						.867	
33. D	It takes me a long time to do something "right"						.800	
4. PS	If I do not set the highest standards for myself, I am likely to end up a second rate person							.554
6. PS	It is important to me that I be thoroughly competent in what I do							.596
16. PS	I am very good at focusing my efforts on attaining my goals					.362	-.421	
12. PS	I set higher goals than most people					.800		
19. PS	I have extremely high goals					.780		
24. PS	Other people seem to accept lower standards for themselves than I do					.568		
30. PS	I expect higher performance in my daily tasks than most people					.646		

Note. PE= Parental Expectations, Frost Multidimensional Perfectionism Scale (FMPS); PC= Parental Criticisms, FMPS; O= Organization, FMPS; CM= Concern Over Making Mistakes, FMPS; D= Doubting Actions, FMPS; PS= Personal Standards, FMPS.

Table 4.

FMPS Factor Loadings Pattern Matrix with Oblique (PROMAX) Rotation: 4 Factors

Item No.		Rotated Coefficients for each Factor			
		1	2	3	4
1. PE	My parents set very high standards for me	-.331	.694		
11. PE	My parents want me to be the best at everything		.677		
15. PE	Only outstanding performance is good enough in my family		.852		
20. PE	My parents expect excellence from me		.751		
26. PE	My parents have always had higher expectations for my future than I have		.702		
3. PC	As a child, I was punished for doing things less than perfectly		.655		
5. PC	My parents never try to understand my mistakes		.657		
22. PC	I never feel that I can meet my parents' expectations		.696		
35. PC	I never feel that I can meet my parents' standards		.647		
2. O	Organization is very important to me			.713	
7. O	I am a neat person			.860	
8. O	I try to be an organized person			.839	
27. O	I try to be a neat person			.853	
29. O	Neatness is very important to me			.850	
31. O	I am an organized person			.829	
9. CM	If I fail at school, I am a failure as a person	.453			
10. CM	I should be upset if I make a mistake	.442			
18. CM	I hate being less than best at things.	.389			.572
14. CM	If I fail partly, it is as bad as being a complete failure	.551			
13. CM	If someone does a task at school better than I do, then I feel as if I failed the whole task	.658			

21. CM	People will probably think less of me if I make a mistake	.508			
23. CM	If I do not do as well as other people, it means I am an inferior being	.657			
25. CM	If I do not do well all the time, people will not respect me	.625			
34. CM	The fewer mistakes I make, the more people will like me	.735			
17. D	Even when I do something very carefully, I often feel that it is not quite	.630			
28. D	I usually have doubts about the simple everyday things that I do	.801			
32. D	I tend to get behind in my work because I repeat things over and over	.607			
33. D	It takes me a long time to do something "right"	.710			
4. PS	If I do not set the highest standards for myself, I am likely to end up a second rate person				
6. PS	It is important to me that I be thoroughly competent in what I do				.534
16. PS	I am very good at focusing my efforts on attaining my goals	-.351			.587
12. PS	I set higher goals than most people				.810
19. PS	I have extremely high goals				.710
24. PS	Other people seem to accept lower standards for themselves than I do				.538
30. PS	I expect higher performance in my daily tasks than most people				.597

Note. PE= Parental Expectations, Frost Multidimensional Perfectionism Scale (FMPS); PC= Parental Criticisms, FMPS; O= Organization, FMPS; CM= Concern Over Making Mistakes, FMPS; D= Doubting Actions, FMPS; PS= Personal Standards, FMPS.

Figure 4. Lastly, in regards to this four factored solution, the correlations among factors were examined and there was support for having used an oblique rotation. The correlations between factor one and the remaining factors were .50, .01, and .30, respectively. The correlations between factor two and factors three and four were -.05 and .30, respectively. Finally, the correlation between factor three and factor four was .30.

To maintain consistency, a factor analysis was also conducted for the MPS (see Table 5). Similar to the PCA of the FMPS, this method was used again to determine whether items on the MPS loaded on the three expected factors (SOP, SPP, OOP) consistent with Hewitt and Flett (1991b). The factor solution was limited to three factors, using a Varimax rotation (items in each facet are not supposed to be intercorrelated) as opposed to the Oblique rotation used with the FMPS. Factor loadings revealed three factors that emerged accounting for 36.62% of the variance. This finding is similar to Hewitt and Flett's (1991b) results from a University sample which revealed the MPS as having three factors accounting for nearly 34% of the variance. Thus, as expected, the MPS was found to have three factors in the present sample (see Scree plot in Figure 5). These three factors are the subscales of socially prescribed perfectionism, self oriented perfectionism, and other oriented perfectionism.

Reliability Analyses and Descriptive Statistics

Reliability analyses and descriptive statistics were run for each measure used in the present research. Since factor analyses revealed a four-factored solution was better suited, reliability and descriptive statistics are reported in Table 6 for the combined perfectionism subscales as well. As shown in Table 6, all of the scales maintain good

Figure 4. Perfectionism Subscales: FMPS – Revised 4 Factors.

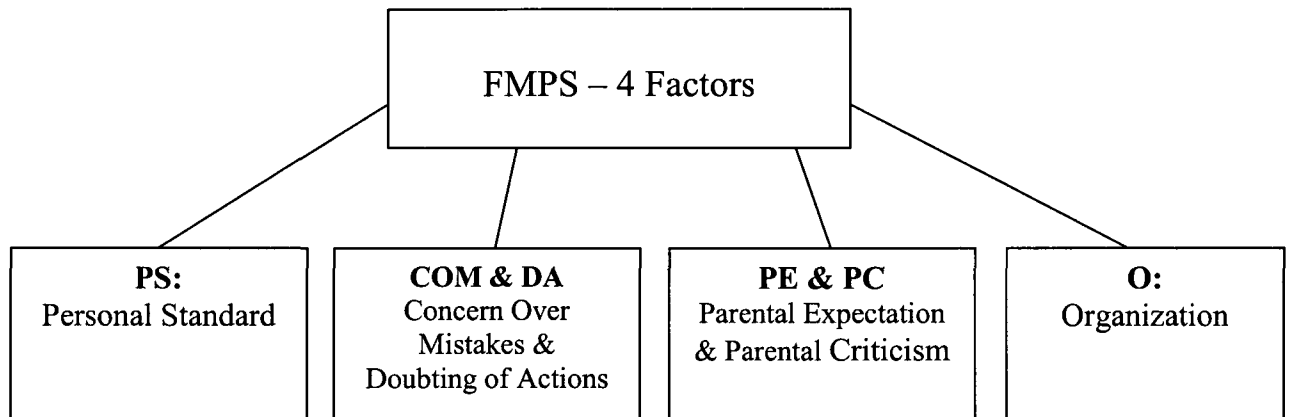


Table 5.

MPS Total Variance: 3 Factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative	Total	% of Variance
1	9.508	21.128	21.128	9.551	21.128
2	3.979	8.843	29.971	3.979	29.971
3	2.991	6.647	36.618	2.991	36.618

Note. Total variance explained with three factors.

Figure 5. Scree plot: Factor Analyses of Hewitt & Flett's Multidimensional Perfectionism Scale:

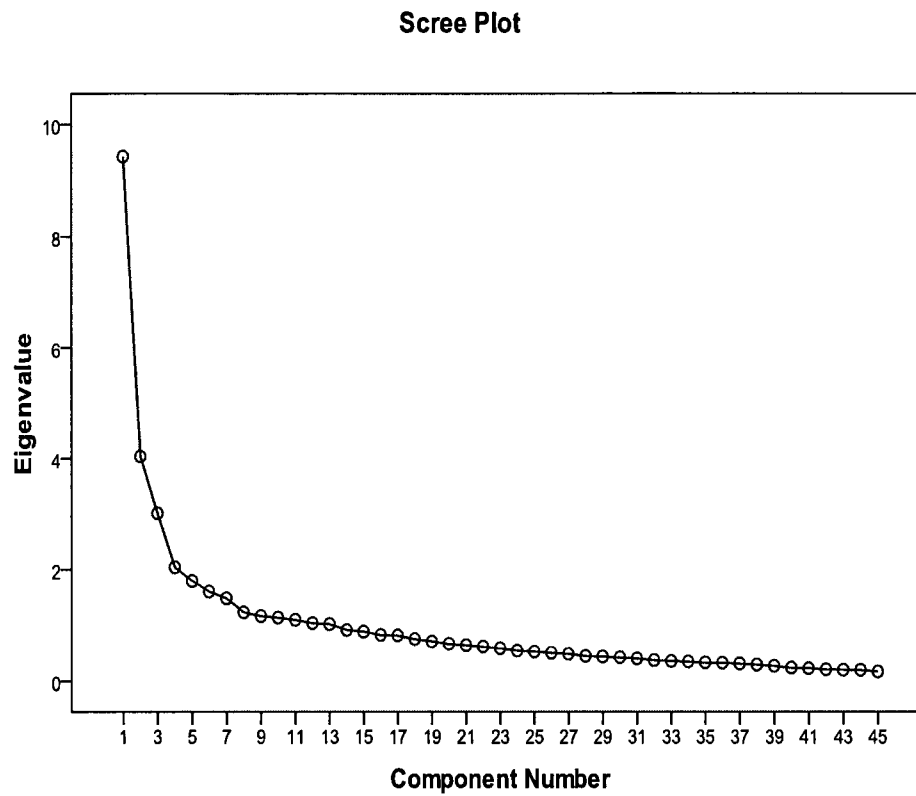


Figure 5. Hewitt and Flett's (1991a) Multidimensional Perfectionism Scale Scree Plot revealing the expected three factor solution.

Table 6.

Reliability Analyses and Descriptive Statistics: Study 1 Measures

	N of items	Mean (SD)	Cronbach's Alpha
LSAS	48	92.43 (22.91)	.96
RRQ	12	38.13 (5.78)	.86
SOP	15	58.17 (5.85)	.70
SPP	15	63.10 (5.35)	.65
OOP	15	62.09 (5.74)	.51
FMPS	35	94.30 (21.00)	.92
PS	7	21.16 (5.37)	.78
O	6	21.36 (5.67)	.91
COM	9	20.80 (7.52)	.88
DA	4	9.89 (3.65)	.74
PE	5	13.30 (4.76)	.81
PC	4	7.90 (3.78)	.82
COM/DA	13	30.69 (10.17)	.89
PE/PC	9	21.21 (7.90)	.88

Note. LSAS = Liebowitz Social Anxiety Scale; RRQ = Rumination total score - The Rumination Reflection Questionnaire; SOP = Self Oriented Perfectionism - Multidimensional Perfectionism Scale (MPS); SPP = Socially Prescribed Perfectionism - MPS ; OOP = Other Oriented Perfectionism - MPS; FMPS = Perfectionism Total Score - Frost Multidimensional Perfectionism Scale; PS = Personal Standards subscale - FMPS; O = Organization subscale - FMPS; COM - Concern Over Mistakes Subscale - FMPS; DA = Doubting Actions subscale - FMPS; PE = Parental Expectations subscale - FMPS; PC = Parental Criticisms subscale - FMPS; COM/DA = Concern Over Mistakes and Doubting Actions Combined subscale - FMPS; PE/PC = Parental Expectations and Parental Criticisms Combined subscale - FMPS.

internal consistency, except the OOP facet of perfectionism (.51) which had a low value of internal consistency. Although the facets of the MPS have yielded good internal consistency in the past, ranging from .71 to .88 (Hewitt & Flett, 1991b), Trumpeter, Watson, and O'Leary (2006) noted the OOP facet of the MPS as having a Cronbach's alpha of .66. Although the alpha of .51 in the present study is low, subsequently discussed correlations with this facet, the remaining MPS facets, and variables of SA and rumination reveal relationships that would be expected based on previous literature. Implications of the OOP facet having low internal consistency will be discussed in greater detail in the discussion section.

Bivariate Correlations

Bivariate correlations among rumination, social anxiety and both scales of perfectionism were conducted and are presented in Table 7. Since factor analysis revealed that a four-factor FMPS was better suited than a six-factor FMPS, perfectionism correlations with SA and rumination are reported for the FMPS with the initial six subscales, as well as with the new combined two subscales; concern over mistakes/doubting actions, and parental expectations/parental criticisms.

Rumination and social anxiety. Confirming previous research and one of the present study's hypotheses, there was a significant positive correlation between rumination via the RRQ and social anxiety via the LSAS ($r = .37, p < .001$). Thus, higher scores of anxiety were associated with higher scores of rumination.

Rumination and perfectionism. As hypothesized, rumination was significantly and positively correlated with all but two aspects of perfectionism (the facet of OOP and the subscale of O). Significant and positive correlations for the remaining facets SOP,

Table 7.

Bivariate Correlations: Study 1

	RRQ	SOP	SPP	OOP	FMPS	COM	DA	PE	PC	PS	O	COM/ DA	PE/PC
LSAS	.37**	.15*	.05	-.06	.14*	.27**	.29**	.03	.14*	-.04	-.07	.31**	.09
RRQ	-	.20**	.19**	-.03	.40**	.44**	.41**	.15*	.23**	.26**	.13	.47**	.20**
SOP		-	.20	-.18**	.34**	.32**	.33**	.26**	.27**	.15*	.07	.36**	.29**
SPP			-	.08**	-.02	.03	.16*	-.35**	-.21**	.09	.13*	.07	-.31**
OOP				-	.02	-.03	-.02**	.00	-.11	.13*	.05	-.03	-.05
FMPS					-	.85**	.66**	.68**	.67**	.74**	.44**	.86**	.73**
COM						-	.61**	.47**	.57**	.56**	.13*	.96**	.55**
DA							-	.38**	.27**	.30**	.38**	.53**	.35**
PE								-	.71**	.37**	.03	.46**	.94**
PC									-	.27**	-.05	.59**	.91**
PS										-	.38**	.53**	.35**
O											-	.12*	.00
COM/DA												-	.55**

Note. LSAS = Liebowitz Social Anxiety Scale; RRQ = Rumination total score - The Rumination Reflection Questionnaire; SOP = Self Oriented Perfectionism - Multidimensional Perfectionism Scale (MPS); SPP= Socially Prescribed Perfectionism – MPS; OOP = Other Oriented Perfectionism – MPS; FMPS = Perfectionism Total Score - Frost Multidimensional Perfectionism Scale (FMPS); COM – Concern Over Mistakes Subscale - FMPS; DA = Doubting Actions subscale - FMPS; PE = Parental Expectations subscale - FMPS; PC = Parental Criticisms subscale - FMPS; PS_SUB = Personal Standards subscale - FMPS; O = Organization subscale – FMPS; COM/DA = Concern Over Mistakes and Doubting Actions Combined subscale - FMPS; PE/PC = Parental Expectations and Parental Criticisms Combined subscale - FMPS.

* $p < .05$, ** $p < .01$

SPP and the remaining subscales COM, PS, PE, PC, DA, COM/DA and PE/PC ranged from, $r=.15, p<.05$ to $r=.47, p<.01$. Specific correlations can be found in Table 7.

Therefore, increased scores of rumination were significantly and positively related to all forms of perfectionism assessed, outside of organization, and other-oriented perfectionism.

Social anxiety and perfectionism. Contrary to one of this study's hypotheses, the SPP facet of perfectionism was not significantly correlated with the LSAS. However, upon examining the other two facets of perfectionism which were not part of the hypotheses for the present study, the SOP subscale revealed a small but significant correlation with the LSAS ($r=.15, p<.05$), and there was not a significant relationship between the LSAS and the OOP subscale.

Upon examining SA and perfectionism via the FMPS, as hypothesized, there was a small but significant positive relationship between social anxiety and overall perfectionism ($r= .14, p<.05$), as well as significant positive correlations between social anxiety and each of the concern over mistakes (COM), doubting actions (DA) concern over mistakes/doubting actions combined subscales (COM/DA), ($r= .27, p<.01, r=.29, p<.01, r= .31 p<.01$ respectively). Further analyses were conducted between the LSAS and the FMPS' subscales. Although not hypothesized, there was a small yet significant positive correlation between the LSAS and the parental criticisms subscale (PC) ($r=.14, p<.05$). However, although there was an initial positive correlation between the LSAS and PC, when when examining the combined PC/PE subscale, there was no significant relation with the LSAS. Furthermore, none of the other subscales (organization, personal standards, and parental expectations) were significantly correlated with SA. Thus, higher

scores of SA were associated with increased reporting of overall perfectionism but only some of the perfectionism subscales.

Additional Correlation Analyses

Social anxiety can arise from both social interactions as well as performance tasks. Thus, for exploratory purposes, correlations were conducted to determine if the relationship between social anxiety and perfectionism, and social anxiety and rumination, differed when examining SA for social interactions as opposed to performance situations. Although these two aspects of SA are often highly intercorrelated, the LSAS was separated into two subscales; performance and social interaction. Upon separating the LSAS into its two subscales, as noted in Table 8, there are not any notable differences between the performance or social interaction subscales in how they relate to perfectionism or rumination

Furthermore, SA can also be examined in terms of fear or anxiety to, and avoidance of social situations. Despite the fact that fear and avoidance tend to be highly correlated, fear and avoidance scores were examined separately with perfectionism and rumination. These results are shown in Table 9. Again, similar to the performance and social interaction subscales, there were no notable differences between avoidance of social situations and fear of social situations in relation to perfectionism and rumination.

Lastly, although this study did not recruit participants based on any anxiety criteria, it was of interest to examine and compare correlations (SA and rumination, perfectionism and SA and rumination and perfectionism), from the entire sample with a subset of “high” SA participants from this same data set. This was done to mimic a socially anxious sample, which will be the focus of Study 2. Participants ($n=85$) with

Table 8.

Bivariate Correlations: LSAS Performance and Social Interaction Subscales with the FMPS and RRQ.

	LSAS_SI	FMPS	SOP	SPP	OOP	RRQ
LSAS_P	.85**	.14*	.14*	.04	-.07	.33**
LSAS_SI	-	.13*	.14*	.06	-.05	.38**

Note. LSAS_P = Performance score = Liebowitz Social Anxiety Scale (LSAS); - LSAS_SI = Social Interaction scores (LSAS); FMPS = Frost Multidimensional Perfectionism Scale; SOP = Self Oriented Perfectionism Subscale – Multidimensional perfectionism Scale (MPS); PS; SPP = Socially Prescribed Perfectionism Subscale – MPS; OOP = Other Oriented Perfectionism Subscale - Multidimensional Perfectionism Scale (MPS); RRQ = Total rumination score - The Rumination Reflection Questionnaire; * $p < .05$, ** $p < .01$

Table 9.

Bivariate Correlations: LSAS Fear and Avoidance Subscales with the MPS and FMPS

	LSAS-Fear	LSAS-Avoidance
LSAS-Avoidance	.81**	-
SOP	.15*	.13
SPP	.08	.02
OOP	-.06	-.06
FMPS	.14*	.14*
COM	.24**	.28**
DA	.27*	.28**
PE	.03	.03
PC	.15*	.12
O	-.05	-.09
PS	-.04	-.04
COM/DA	.27**	.31**
PE/PC	.08	.08
RRQ	.34**	.36**

Note. LSAS - Avoidance = Avoidance score - Liebowitz Social Anxiety Scale (LSAS); LSAS-Fear = Fear score (LSAS); SOP = Self Oriented Perfectionism Subscale of the Multidimensional Perfectionism Scale (MPS); SPP = Socially Prescribed Perfectionism Subscale – MPS; OOP = Other Oriented Perfectionism Subscale - MPS; FMPS = Frost Multidimensional Perfectionism Scale (FMPS); COM = Concern Over Mistakes subscale - FMPS; PE = Parental Expectations subscale - FMPS; PC = Parental Criticisms subscale - FMPS; DA = Doubting Actions subscale - FMPS; O = Organization subscale – FMPS; PS = Personal Standards subscale – FMPS; PE/PC = Parental Expectations and Parental Criticisms combined subscale – FMPS; COM/DA = Concern Over Mistakes and Doubting Actions combined subscale – FMPS; RRQ = Rumination total score - Rumination Reflection Questionnaire.

* $p < .05$, ** $p < .01$

scores above 100 on the LSAS (roughly the top third of LSAS scores) were considered to be those in the high anxiety subset. Bivariate Correlations shown in Table 10 were run with this subset of high socially anxious participants. The correlations between rumination and perfectionism and SA and perfectionism in the high subset of participants did not exactly mirror these correlations from the whole sample (compare to results in Table 7); however, overall the pattern of results is similar. Although there were no stated expectations regarding this high SA subset of participants, the goal of these analyses was to determine if fewer or more aspects of perfectionism were significantly and positively related to SA in a high SA group.

Mediation Analyses

The mediation model illustrated in Figure 6 consists of three variables: perfectionism, rumination and social anxiety. To test the hypothesis that rumination would mediate the relationship between SA and perfectionism, a series of linear regressions were conducted as per Baron and Kenny (1986).

As shown in Figure 7A, the first path examined was the path between SA and perfectionism via the FMPS total, $\beta = .14$, $p < .05$. Next, as shown in Figure 7B, the path between SA and rumination was examined, $\beta = .37$, $p < .001$, followed by the path between rumination and perfectionism, $\beta = .38$, $p < .001$. Lastly, the path between SA and perfectionism was reexamined once the mediator, rumination, was controlled for, $\beta = -.06$, $p = .93$. Following confirmation of Baron and Kenny's mediation conditions, the effect of rumination on perfectionism and SA was assessed for significance using Sobel's test (Sobel, 1982). Rumination was supported as a significant mediator for the relationship between SA and perfectionism (Sobel $z = 4.43$, $p < .001$; see Figure 7B).

Table 10.

Bivariate Correlations for Subset of “High” Socially Anxious Participants (Study 1) (N=85)

	RRQ	SOP	SPP	OOP	FMPS	COM/ DA	PE/ PC	PS	O
LSAS	.26*	.27*	-.11	-.10	.22*	.25*	.25*	.11	.00
RRQ	-	.07	.09	.12	.27*	.33**	.06	.22*	.09

Note. LSAS = Liebowitz Social Anxiety Scale; RRQ – Rumination total score - Rumination Reflection Questionnaire; SOP = Self Oriented Perfectionism subscale – Multidimensional Perfectionism Subscale (MPS); SPP= Socially Prescribed Perfectionism subscale – MPS; OOP = Other Oriented Perfectionism subscale - MPS; FMPS = Perfectionism Total Score - Frost Multidimensional Perfectionism Scale (FMPS); PS = Personal Standards subscale – FMPS; O = Organization subscale – FMPS; COM/DA = Concern Over Mistakes and Doubting Actions combined subscale – FMPS; PE/PC = Parental Expectations and Parental Criticisms combined subscale – FMPS.
* $p < .05$, ** $p < .01$

Figure 6. Mediation Model of Rumination

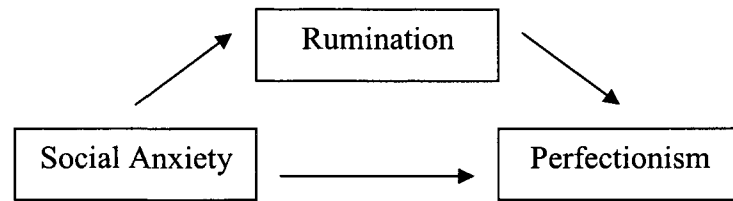


Figure 6. The mediation model with rumination as a mediator between social anxiety and perfectionism.

Figure 7A. SA and Total Perfectionism (FMPS)

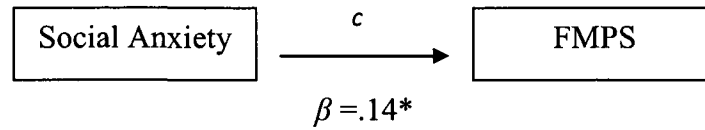


Figure 7A. The direct model of social anxiety and perfectionism before rumination was considered as a mediator.

* $p < .05$

Figure 7B. Mediation - Rumination

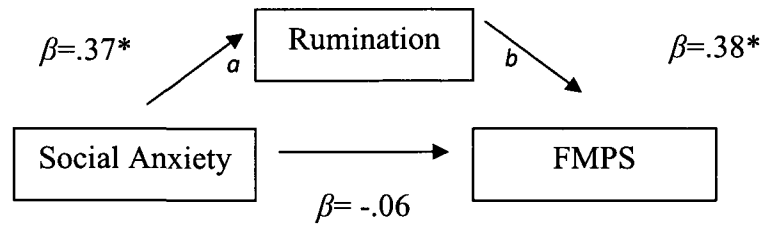


Figure 7B. The mediation model with rumination as a mediator between social anxiety and perfectionism. Mediation analyses reveal rumination to completely mediate the relationship between SA and perfectionism (FMPS).

* $p < .01$

Additionally, although it was hypothesized that SA would be significantly correlated with socially prescribed perfectionism (SPP), this was not the case. However as previously mentioned, SA was positively correlated with self oriented perfectionism (SOP). While there was no specific hypothesis for the mediation of rumination on the relationship between SA and SOP, regressions were still carried out. As shown in Figure 8A, the first path examined was the path between SA and SOP, $\beta = .16, p < .05$. Next, as shown in Figure 8B, the path between SA and rumination was examined, $\beta = .37, p < .001$, followed by the path between rumination and SOP, $\beta = .15, p < .05$. Lastly, the path between SA and SOP was reexamined once the mediator, rumination, was controlled for, $\beta = .08, p = .23$. Following confirmation of Baron and Kenny's mediation conditions, the effect of rumination on perfectionism and SA was assessed for significance using Sobel's test (Sobel, 1982). In this instance, rumination was not supported as a significant mediator for the relationship between SA and SOP (Sobel $z = .60, p = .56$, see Figure 8B).

Discussion

The purpose of Study 1 was to test the factor structure of the FMPS and examine the relationships among perfectionism, rumination, and SA. Additionally Study 1 sought to examine a mediation model, specifically, to determine if there is support for rumination mediating the relationship between SA and perfectionism. Factor analyses were conducted on the FMPS and the MPS scales to determine the factorial stability of these measures with the present sample of university participants. As expected, there was support that the MPS consists of the three original and expected subscales SOP, SPP, and OOP.

Figure 8A. SA and Self Oriented Perfectionism (SOP)

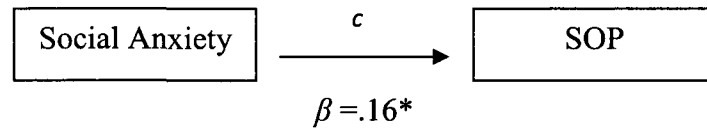


Figure 8A. The direct model of social anxiety and perfectionism before rumination was considered as a mediator.

* $p < .05$

Figure 8B. Mediation of Rumination

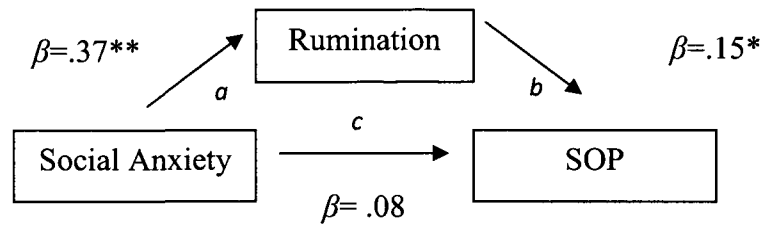


Figure 8B. The mediation model with rumination as a mediator between social anxiety and perfectionism. Mediation analyses did not reveal support for rumination as a mediating variable between SA and perfectionism (SOP).

* $p < .05$, ** $p < .01$

However, in contrast to the expected six-factored solution for the FMPS, based on the proportion of variance accounted for with four factors, in addition to a more clear pattern of factor loadings, analyses from the present research revealed a four factored solution as more suitable than six (parental expectations/parental criticisms, organization, personal standards, and doubting actions/concern over mistakes; see previously noted Figure 4).

In addition to the noted six, but preferred four factor solution in the present research, it also appears that other researchers have noted a statistically possible six factor solution, while preferring a four, or even three factored solution. For example, Parker and Adkins (1995) and Parker and Stumpf (1995) replicated the Frost et al. (1990) six-factor solution, across two different samples; one being male and female university students, the other being academically gifted male and female children. However, Purdon, Antony, and Swinson (1999) examined the factor structure of the FMPS in a socially anxious population, and arrived at a different conclusion. Although Purdon et al. (1999) noted that six factors was acceptable based on an examination of the eigenvalues and variance accounted for, upon examining the scree plot, and the proportion of variance of the last three factors, Purdon and colleagues deemed a three factored solution as a better fit for the scale. Stöber (1998) also examined the factor structure of the FMPS, through a sample of undergraduate students. Following principal component analyses, Stöber made similar claims to Purdon et al. (1999) that a six-factored solution is statistically acceptable; however, upon more rigorous analyses it was concluded that a four-factored solution was more appropriate for this scale.

In regards to the present research, a four factored solution for the FMPS was also found to be a more appropriate fit than six factors. Therefore, although there has been mixed support regarding a six-factored solution for FMPS, this mixed support appears to be due to differences in opinion regarding the best factor solution, rather than differences in the factor structure based on sample. There has been no supporting evidence that the factor structure of the FMPS is different across dissimilar samples.

In regards to relationships among SA, perfectionism and rumination, previous research has noted significant correlations between rumination and perfectionism, SA and rumination, and SA and perfectionism (Juster et al., 1996; Clark & Wells, 1995; and O'Connor et al., 2007). Therefore this study hypothesized that similar relationships would be found when testing these variables in a University sample. In addition to these expected relationships, more precise expectations were made for the relationship between SA and perfectionism. Based on previous literature which has linked SA with socially prescribed perfectionism (SPP), concern over mistakes (COM) and doubting actions (DA) (Laurenti et al., 2008; and Rosser et al., 2003 respectively), it was expected that SA would specifically be positively correlated with SPP from the MPS, and COM and DA from the FMPS.

Consistent with the hypotheses regarding positive correlations between rumination and SA, rumination and perfectionism and SA and perfectionism, these relationships were all supported. Additionally, but contrary to one of the present study's hypotheses, SA was not significantly correlated with the socially prescribed facet of perfectionism. This was also the case when looking at the subset of "high" socially anxious participants in Study 1. It is noteworthy to mention that in previous research that

found positive and significant correlations between SA and SPP, different measures of SA were used, and in some instances a socially anxious sample was examined (e.g., Laurenti et al., 2008 and Juster et al., 1996). Thus, the lack of significant correlation between SA and SPP may be due to the use of a different measure to assess SA, or that participants in this study were not pre-selected for high SA or perfectionism.

Lastly, based on regression analyses, rumination was supported as a mediator between SA and perfectionism (FMPS, DA, COM and COM/DA). It is possible that higher SA might be leading to higher rumination, which consequentially is leading to higher perfectionism. However, it should also be noted that although the mediation is suggesting a causal effect of rumination, experimentally testing this hypothesis would provide more definitive evidence.

It is of interest to note that the correlation coefficients found in the present study map on well to correlation coefficients between similar scales noted in other studies. For example, the present study's correlation coefficient between the LSAS and the RRQ, ($r = .33, p < .05$) was very similar to that found in Jones and Fernyhough (2009) $r = .34, p < .01$). The present study's coefficients for RRQ and MPS - socially prescribed, self oriented and other oriented perfectionism ($r = .19, p < .01, r = .20, p < .01, r = -.03$) were similar to those found by O'Connor et al. (2007), using the same scales ($r = .39, p < .001, r = .24, p < .01, r = .12$). Lastly, coefficients between the LSAS and the FMPS (ranging from $r = -.07$ to $r = .29, p < .01$) previously shown in Table 7, are similar to coefficients found in a study by Juster and colleagues (1996) looking at the FMPS and the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) and the Social Phobia Scale (SPS; Mattick & Clarke, 1998).

Overall, this study has replicated previous research on the relationships among SA, perfectionism and rumination and has added to the research on the factor structure of the FMPS. Results from this study also suggest that rumination may be responsible for impacting the relationship between SA and elevated perfectionism. However based on the design of this study and analyses, an experimental approach would warrant more definitive evidence for these results, rendering further research in this area necessary.

Limitations and Future Research

Although this study has made some contributions to the literature surrounding SA and personality, there were some limitations that should be noted. Firstly, the online nature of the study may have hindered participants from accurately reporting on the measures used, as participants were able to choose their own location and environment to complete this study. Because of this, some participants might have been in distracting environments, or may have been doing other tasks simultaneously. Evidence for this possibility can be found in the reliability analyses of measures used in the present study. As previously mentioned, all of the measures used in the present study had good or acceptable internal consistency except the OOP facet of perfectionism ($\alpha = .51$). Since the MPS was presented to participants after the FMPS, it is possible that if participants were in a distracting environment, they may have rushed through items on the MPS if they felt they had already responded to similar items. Although the OOP facet revealed a low value of internal consistency, subsequently presented results still reveal expected relations among OOP and SA and rumination despite this low value. Overall, given that the OOP was still related to other variables as was expected, this scale

was retained in the present study despite the low reliability and these results should be interpreted with caution.

Secondly, although the LSAS is a valid and reliable measure of SA and many correlations in the present study revealed relationships similar to previous research, the LSAS is most commonly used with socially anxious (clinical) samples. Therefore, because the LSAS was used to examine SA in a non-clinical sample of participants who were not recruited on a high and low social anxiety basis, it is possible that relationships between SA and rumination, or SA and perfectionism have may have been less or more marked than they would have been if a different measure or sample of participants was used. Lastly, the most important limitation of Study 1 was that data were acquired at only one time point and there was no manipulation. As such, it was not possible to render definitive causal inferences regarding the relationships among SA, rumination and perfectionism.

In regards to directions for future work, researchers might want to consider additional variables outside of SA, rumination and perfectionism, which may be influencing the relationships noted in this study. For example, rumination, worry, depression, and neuroticism, have all been significantly and positively correlated with one another Muris, Roelofs, Rassin, Franken, and Mayer (2005). It has also been previously noted, when examining SA and perfectionism, Rosser et al. (2003) concluded that neuroticism and not depression, had significant effects on socially anxious individuals' reporting of COM. Additionally, they noted that neuroticism, worry and rumination were all positively linked to anxiety and depression.

Furthermore, future research could also examine differences in the relationships among SA, perfectionism and rumination, with high and low socially anxious groups, or causally assess the impact of rumination on SA and perfectionism.

Despite the fact that Study 1 was not designed to make causal inferences regarding the relationships among SA, rumination and perfectionism, there was preliminary support for rumination as a mediator of the relationship between SA and perfectionism. As such, the purpose of Study 2 was to examine the impact of rumination on state perfectionism and SA. Specifically, Study 2 aimed to examine a socially anxious population and experimentally test the effects of rumination on state anxiety and state perfectionism.

Study 2 – Examining the Causal Effects of Rumination on SA and Perfectionism

The purpose of Study 2 was to further investigate the relationships among SA, rumination and perfectionism over two parts. At Part 1, this study aimed to present socially anxious participants with an anxiety induction task, and then experimentally compare the impact of three manipulation conditions (rumination, distraction and control) on state anxiety and state perfectionism. It was hypothesized that like Study 1, SA and rumination, rumination and perfectionism and SA and perfectionism would be positively and significantly correlated, and that rumination would again act as a mediating variable between SA and perfectionism. However, novel to Study 2, following an anxiety induction, it was expected that state anxiety and state perfectionism scores, would differ based on condition (rumination, distraction, and control).

Firstly, it was hypothesized that participants placed in the rumination condition, following an anxiety induction task, would report the highest state social anxiety scores

of the three conditions. Next, it was expected that participants placed in the control condition would also report high scores on state anxiety, however not quite as high as scores from the rumination condition, but still higher than those in the distraction condition. This was expected based on the research of Kocovski et al. (2005), which noted that socially anxious individuals tend to ruminate following an anxiety provoking event. Therefore, it was expected that participants placed in the control condition would likely engage in some form of rumination even without being encouraged to do so, thus impacting their reported anxiety scores following the manipulation. Lastly, it was expected that those in the distraction condition would report the lowest state anxiety scores of the three conditions, as these participants would not be engaging in rumination. The same pattern was expected for state perfectionism, namely that those in the rumination condition would report the highest levels of state perfectionism, followed by those in the control and distraction conditions.

Similar to the hypotheses made for each manipulation condition at Part 1, for Part 2 it was expected that those in the rumination condition would report the highest post-event rumination scores, followed by those in the control and then distraction condition. Additionally, it was expected that state perfectionism scores from Part 1 would be significantly and positively correlated with post-event rumination at Part 2.

Method

Participants

According to power analysis, to achieve a power of .91 or greater with an effect size of at least .5, thirty-five participants were required per condition. Participants for Study 2 were initially a sample of 104 socially anxious individuals that were recruited

based on their SIAS scores (above 34) in mass testing at the beginning of the fall term. Since SA can fluctuate across time and situation, to be certain that participants were still reporting elevated levels of SA while in the lab, the SIAS was administered and scored again. As a result, three participants did not meet criteria at the time of their in-lab participation and thus were not retained for analyses. Thus 101 students completed Part 1 of this study. Of those participants, 81 (81%) completed Part 2. Participants consisted of 70 female and 31 male undergraduate students from Wilfrid Laurier University. Participants were recruited for this study by phone (see Appendix I) and by e-mail (see Appendix J). Additionally, eligible participants were able to sign themselves up after viewing the study's research ad (see Appendix K). Participation was exchanged for course credit and an opportunity to win one of five 10 dollar Tim Horton's gift cards. The majority of the sample identified as Caucasian 73.5% ($n=70$). Participants ages varied from 17 to 23, with the majority of the sample falling between 18 and 19 years of age (76%). More detailed demographic information is reported in Table 11.

Measures

Measures used for this study acquired demographic information about participants and assessed perfectionism in both trait and state forms, trait social anxiety, state anxiety and rumination. Additionally, two tasks were utilized to induce rumination and distraction as manipulation conditions and following these manipulations a manipulation check scale was administered. Measures previously used in Study 1 that were utilized again for Study 2 include: the Multidimensional Perfectionism Scale, the Frost Multidimensional Perfectionism Scale, the Liebowitz Social Anxiety Scale, and the

Table 11.

Demographic Information: Study 2

	Frequency (N=101)	Percent (%)
Gender		
Female	70	69.4%
Male	31	30.6%
Education		
Part of University	97	96%
Graduated College	2	2%
Graduated Undergrad	2	2%
Marital Status		
Single	99	98%
Married	0	
Cohabiting	2	2%
Separated	0	
Missing	0	
Occupational Status		
Unemployed	4	4%
Employed FT	0	
Employed PT	3	3%
Student FT	93	92%
Student PT	0	
Missing	1	1%
Ethnicity		
White/ Caucasian	72	71%
Asian	24	24%
Other	2	2%
Missing	3	3%

Rumination and Reflection Questionnaire. The following are additional scales used in Study 2.

Social Interaction Anxiety Scale. Participants were pre-screened and assessed for social anxiety through the Social Interaction Anxiety Scale (SIAS). This measure was used for pre-screening as it is a commonly utilized SA measure with non-clinical populations (e.g. university student samples). The SIAS assesses anxiety arising from affective, cognitive, and behavioural reactions to daily interactions (Mattick & Clarke, 1998). According to Heimberg, Mueller, and Holt (1992) individuals who would be considered as “social phobic”, are those who score above one standard deviation from the mean of a non-socially anxious community sample. As such, scores above 34 on the SIAS denote social phobia, or high levels of social anxiety. The SIAS is a 20-item measure that is scored with a five-point Likert rating system (1 - not at all characteristic, to 5 – extremely characteristic), see Appendix L. The SIAS is appropriate to assess anxiety in both clinical and non-clinical samples. This scale has been said to have good validity, with a normal distribution, and this scale has strong internal consistency, with alphas ranging from .86 to .94 (Mattick & Clarke, 1998).

Subjective Units of Distress Scale. Anxiety as a state was assessed using the Subjective Units of Distress/Discomfort Scale (SUDS) (Wolpe, 1958). Participants had to ascribe a number corresponding with their feelings at a current moment, ranging from 0 (no distress, tension and/or anxiety) to 100 (highest possible stress, tension and/or anxiety). See Appendix M.

Multiple Perfectionism Test. Perfectionism as a state was assessed using a slightly altered version of the Multiple Perfectionism Test (MPT) (Saboonchi & Lundh, 1999). Items were altered to refer to the speech task participants had to deliver. The MPT consists of 8 items, assessing: task performance (1), concern about doing one's best (1), thinking about shortcomings (2), worry about making mistakes (1), organization (1), and effect of other's impressions (1) (Saboonchi & Lundh). Items are based on a six-point Likert Scale, 1 (not at all important/concerned/satisfied) to 6 (very important/concerned/satisfied), with higher scores denoting a greater perfectionist state. See Appendix N. According to Saboonchi and Lundh, Cronbach's alpha for the MPT was only .56 but the MPT had strong convergent validity with the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991b), $r=.48, p<.001$ (Saboonchi & Lundh).

State Perfectionism: Socially Prescribed Perfectionism. State perfectionism was also assessed by utilizing an altered version of the socially prescribed perfectionism facet from the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991a). Items were altered from assessing general feelings about socially prescribed perfectionism, to reflect how participants felt in a specific situation (in that moment). Therefore, instead of items assessing things such as: "those around me readily accept that I can make mistakes too", items were changed to things such as: "Right now, I feel like the researcher can readily accept that I can make mistakes". This subscale is based on a seven-point Likert scale 1 (strongly disagree) to 7 (strongly agree), and consists of 15 items assessing things like: meeting the researchers expectations, feeling as though the researcher expects success and striving to meet perfection for the researchers' sake. See Appendix O.

Psychometric data for the entire measure as a trait (MPS - including the SPP facet) has been previously reported in Study 1.

State Perfectionism: Concern Over Mistakes and Doubting Actions. State perfectionism was also assessed by utilizing an altered version of the concern over mistakes (COM) and doubting actions (DA) subscales from the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). Items were altered from assessing general feelings about perfectionism, to reflect the specific speech induction task. Therefore, instead of items assessing things such as: “If I fail at school, I am a failure as a person”, items were phrased like: “Right now, I feel like if I fail at tasks such as introducing myself, I am a failure as a person”. The COM subscale consists of 9 items, and the DA subscale consists of 4 items which could be responded to on a five-point Likert Scale, 1 (disagree) to 5 (agree). Items assessed things such as, being upset over making a mistake during a speech, losing respect of the researcher during the speech, or having a difficult time getting the speech “right”. See Appendix P. Psychometric data for this entire measure (FMPS – including the COM and DA subscales) has been previously reported in Study 1.

Rumination Questionnaire. Rumination was induced as a manipulation component of Study 2, by utilizing a slightly modified version of the Rumination Questionnaire (RQ) that was based on the work of Kocovski et al. (2011). This induction measure required participants to think and write about: concerns about their speech, their appearance, their physical sensations, potential for improvement, and their personal performance compared to how they felt others would have performed at this same task, for ten minutes. See Appendix Q.

Distraction Induction Task. Distraction was induced as a manipulation component of Study 2, by utilizing Nolen-Hoeksema and Morrow's (1993) distraction induction items. This induction required participants to think about 45 potential items or scenarios such as: "the layout of a local post office" or "raindrops sliding down a windowpane". This manipulation was intended to distract participants from the speech they just delivered (Nolen-Hoeksema & Morrow, 1993). See Appendix R.

Manipulation Check. To assess the effectiveness of the manipulation conditions, a 3 item manipulation check measure created for this research was administered. Participants were asked to think back to the exercise that they completed (rumination or distraction tasks) and for participants in the control condition, to think back to the time when they were waiting for the researcher to score some of their items. After reminding participants of this time in the study, they were asked to select options which best suited their thoughts at that point. See Appendix S for the Manipulation Check Scale.

Post Event Processing Questionnaire. Post-event rumination was assessed using a slightly modified version of the 17-item Revised Post Event Processing Questionnaire (RPEPQ) (Fehm, Hoyer, Schneider, Lindemann, & Klusmann, 2008), which was modified from the original Post Event Processing Questionnaire developed by Rachman, Gruter-Andrew, and Shafran (2000). The PEPQ used in the present research consists of 18 items, whereby the last item on the 17-item RPEPQ scale was separated into two items: "in your memories about the conversation task, did you see yourself (your behaviour, your attributes) in a negative way?" and "in your memories about the conversation task, did you see yourself (your behaviour, your attributes) in a positive way?". The positive item was reverse scored. Some examples of other items on this scale

include questions pertaining to thoughts about the event, shame about the event, interruptions in concentration because of the event or thoughts about bodily sensations at the time of the event. Participants responded to each item on a visual analogue scale ranging from 0 to 100. See Appendix T. According to Rachman et al. (2002) the PEPQ maintains high internal consistency with a Cronbach's alpha of .85.

Thoughts Questionnaire. Post-event rumination was also assessed using a second scale. Twenty-three of the original twenty-nine positive and negative items on the Thoughts Questionnaire (Edwards, Rapee, & Franklin, 2003), were used in the present research, as 7 items from the original scale pertained to feedback from the tester and participants' speech choice, which were not relevant to the present study. Thus, the 23 item TQ consisted of two subscales; a positive thoughts subscale (TQ-Pos), (8 items) and a negative thoughts subscale (TQ-Neg), (13 items) with 2 stand-alone items that assessed the situation "as a whole". Items were rated on a 5-point Likert scale 0 (never) to 4 (very often. Sample items include "My speech was good" and "I made a fool of myself" (See Appendix U). Edwards et al. (2003) noted excellent internal consistency with a Cronbach's alpha for this measure of .90

Procedure

Part 1. Participants began this study by signing a consent form (see Appendix V). Next, they were asked to fill out several computer based questionnaires assessing demographic information, trait perfectionism, trait SA, and rumination. Following completion of these computer based questionnaires, participants were requested to deliver a three minute impromptu speech, introducing themselves to the researcher.

The speech task was intended to serve as an anxiety induction task and so just before participants were asked to give their speech, they were provided with a copy of the Subjective Units of Distress Scale that measures current distress/anxiety (SUDS; Wolpe, 1958). After filling out the SUDS, participants were then instructed to give their three minute speech to the researcher. Participants were provided with the following information and instructions:

Now that you have completed the first battery of questionnaires, you will move to the next part of the study. As was mentioned in both the PREP ad and in your consent form, you will be asked to complete a brief introductory speech about yourself to me (the researcher). This speech task will be timed, and will be for 3 full minutes. Please stand over the marked location on the floor.

Your instructions are: Spend the next 3 minutes introducing yourself to me, sharing only what you feel comfortable with (for example, things about school, your hobbies, or your friends). If you run out of things to say, please repeat something you have already mentioned. I will let you know when your time is up.

Following this speech, participants were presented with another copy of the SUDS, addressing how anxious/distressed they were feeling at that moment, which was followed by the ten-minute manipulation condition to which participants were randomly assigned prior to starting the study. Instructions for the rumination and distraction conditions were provided on the worksheets given to participants in these conditions,

however since there was no exercise for participants in the control condition to complete, participants in this condition were told the following:

“Before you can move forward and complete the last part of this study, I will need to score some of your previous responses. It may take me several minutes to do so. Please take a seat and wait quietly. I will let you know when I am finished so that you can move forward”.

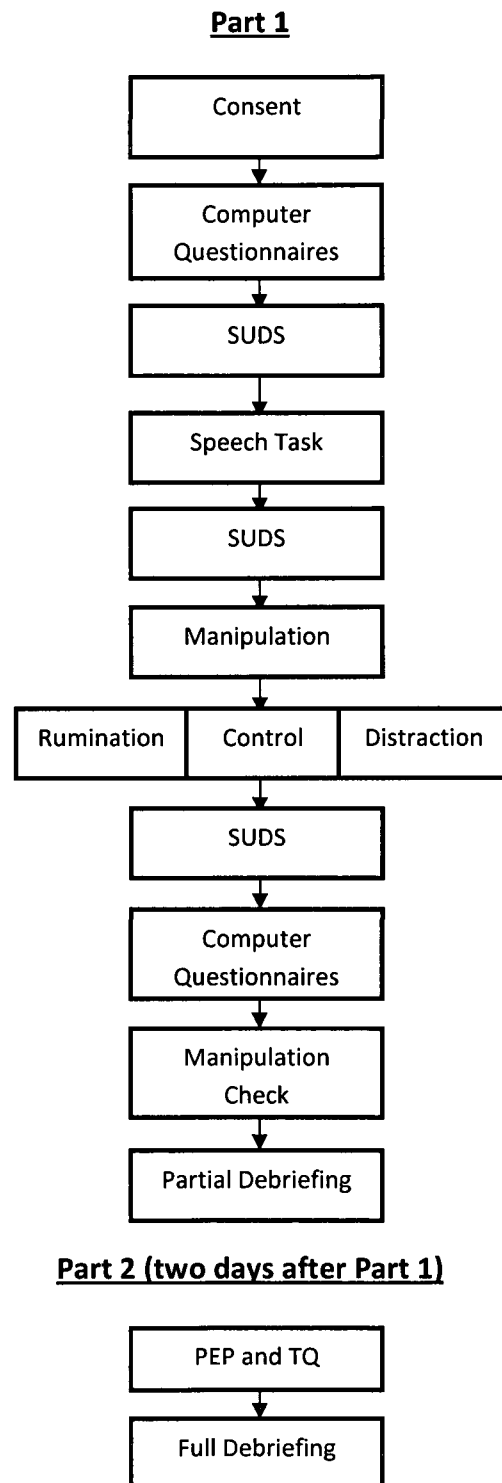
After the ten-minute manipulation, participants were presented with a third and final copy of the SUDS to depict their current level of anxiety/distress at that moment. Next, participants were presented with the remainder of this study’s questionnaires, the Multiple Perfectionism Test (MPT), the state socially prescribed perfectionism and the state concern over mistakes and doubting actions subscales. Upon completing these last questionnaires, participants were presented with the 3-item manipulation check to assess their thoughts during the manipulation: to what extent they were thinking about their speech, dwelling on their speech, or thinking of things unrelated to their speech. Lastly, participants were given a partial debriefing form (see Appendix W), and were signed up for Part 2 of this study.

Part 2. Part 2 of this study took place online, two days following Part 1, whereby participants were e-mailed a link to complete the post-event rumination measures. Upon completion of Part 2 of this study, participants were provided with a full debriefing form (see Appendix X). For a full outline of Study 2, see Figure 9.

Results

Screening the Data

Figure 9. Procedural Diagram: Main Steps in Study 2.



Data was screened for outliers (± 3 standard deviations from the mean) by examining boxplots and Z-scores for each scale for every participant. One participant was considered an outlier on the SPP scale. Analyses were run with and without this participant's data for tests involving the SPP facet and no significant differences were noted. As a result, this participant's data was retained, leaving a final sample of 101 participants for the present research.

Analytic Strategy

Reliability analyses and descriptive statistics were conducted for all of the measures used in Study 2, but it was of particular interest to examine the internal consistency of the state perfectionism measures, as these scales were created by modifying items from existing scales. Next, bivariate correlations were conducted with the state and trait perfectionism measures, to corroborate the appropriateness of the state scales used in this research. Bivariate correlations were also conducted to examine the relationships between rumination and SA, rumination and perfectionism, and SA and perfectionism. Next, rumination was examined as a mediator between SA and perfectionism. After testing the mediation model, participants who completed Part 1 and Part 2 of this study ($n=81$) were compared to participants who only completed Part 1 ($n=20$) on all measures delivered prior to the experimental manipulation. After that, ANOVAs were conducted to test for any pre-existing differences across conditions prior to the manipulation. This was followed by examining the effectiveness of the manipulations, and then ANOVAs were conducted to determine if there were differences across the manipulation conditions (rumination, control, and distraction) on state anxiety, state perfectionism, and post-event rumination. Lastly, additional bivariate correlations

were conducted examining the relationships between state perfectionism at Part 1 and post-event rumination at Part 2.

Reliability Analyses

Reliability analyses were conducted on each of the measures used in Study 2. Cronbach's alphas can be seen in Table 12, and range from .41 to .93. The alpha for the MPT (.41) in the present research is similar to what Saboonchi and Lundh (1999) noted (.56). Statistically this value, along with the alpha (.56) for the state SPP scale, and the alphas for the SOP, SPP and OOP facets are considered low in terms of internal consistency. Implications will be further discussed in the limitations and future research section. It is important to note however that the state COM/DA perfectionism scale in addition to the remaining scales all maintained good internal consistency.

Bivariate Correlations among SA, Rumination and Perfectionism

Bivariate correlations between the state and trait perfectionism measures are presented in Table 13. Pearson correlations revealed that the three state scales were significantly and positively correlated with one another, however only state COM/DA was significantly and positively correlated with the FMPS and trait COM/DA. State SPP was not significantly correlated with trait SPP, but was positively correlated with trait COM/DA, and the MPT did not significantly correlate with trait perfectionism (total scores), trait SPP, or trait COM/DA. Bivariate correlations among trait rumination, trait social anxiety and both scales of trait perfectionism were conducted and are presented in Table 14. Based on the results from Study 1, a four factored solution for the FMPS was used for Study 2. Thus, correlations between SA and rumination with perfectionism are shown with the FMPS as having four instead of six subscales: parental

Table 12.

Reliability Analyses and Descriptive Statistics: Study 2 Measures

	N of items	Mean (SD)	Cronbach's Alpha
SOP	15	62.01 (8.89)	.58
SPP	15	62.50 (8.15)	.53
OOP	15	58.38 (8.81)	.58
FMPS	35	106.46 (15.99)	.87
COM	9	23.84 (6.24)	.83
DA	4	12.34 (3.12)	.63
PE	5	14.97 (4.18)	.77
PC	4	8.75 (3.65)	.80
PS	7	23.77 (4.56)	.79
O	6	22.75 (5.14)	.92
COM/DA	13	36.18 (7.96)	.82
PE/PC	9	23.69 (7.19)	.86
MPT	6	18.75 (3.89)	.41
State SPP	15	50.70 (7.30)	.56
State COM/DA	4	32.90 (9.89)	.90
LSAS	48	109.66 (19.93)	.91
SIAS	20	56.51 (11.10)	.84
RRQ	12	47.04 (6.43)	.81
PEPQ	18	43.59 (17.86)	.93
TQ-Pos	7	13.44 (5.13)	.85
TQ-Neg	16	43.48 (13.05)	.89

Note. SOP = Self Oriented Perfectionism - Multidimensional Perfectionism Scale (MPS); SPP= Socially Prescribed Perfectionism - MPS; OOP = Other Oriented Perfectionism - MPS; FMPS = Perfectionism Total Score - Frost Multidimensional Perfectionism Scale (FMPS); COM - Concern Over Mistakes Subscale – FMPS; DA = Doubting Actions subscale - FMPS; PE = Parental Expectations subscale - FMPS; PC = Parental Criticisms subscale FMPS; PS_SUB = Personal Standards subscale - FMPS; O = Organization subscale - FMPS; COM/DA = Concern Over Mistakes and Doubting Actions Combined subscale - FMPS; PE/PC = Parental Expectations and Parental Criticisms Combined subscale - FMPS; MPT = State Perfectionism - Multiple Perfectionism Test; State SPP = State Socially Prescribed Perfectionism; State COM/DA = State Concern Over Mistakes and Doubting Actions LSAS = Trait Social Anxiety score - Liebowitz Social Anxiety Scale; RRQ = Rumination total score - The Rumination Reflection Questionnaire; PEPQ = Post-event Rumination – Post Event Processing Questionnaire; TQ-Pos = Post-event Rumination Positive Thoughts subscale - Thoughts Questionnaire (TQ); TQ-Neg = Post-event Rumination Negative Thoughts subscale - TQ.

Table 13.

Bivariate Correlations: State Perfectionism Measures with Trait Perfectionism (N=81)

	State perfectionism		Trait Perfectionism		
	SPP	COM/DA	FMPS	SPP	COM/DA
MPT	.32*	.39**	.17	-.15	.14
State SPP	-	.45**	.19	-.01	.23*
State COM/DA		-	.38**	-.08	.49**

Note. MPT = State Perfectionism - Multiple Perfectionism Test; State SPP = State Socially Prescribed Perfectionism; State COM/DA = State Concern Over Mistakes and Doubting Actions; FMPS = Frost Multidimensional Perfectionism Scale - FMPS; SPP = Socially Prescribed Perfectionism – Multidimensional Perfectionism Scale (MPS); COM/DA = Concern Over Mistakes and Doubting Actions Combined Subscale –FMPS.
* $p < .05$, ** $p < .01$

Table 14.

Bivariate Correlations: Study 2 (N=101)

	SIAS	RRQ	SOP	SPP	OOP	FMPS	COM/DA	PE/PC	PS	O
LSAS	.63**	.21*	.22*	.44*	.06	.41**	.37**	.25*	.15	.20*
SIAS	-	.40**	.19	.40**	.14	.42**	.51**	.17	.10	.19
RRQ		-	.27**	.38**	.09	.42**	.39**	.27*	.17	.15
SOP			-	.43**	.26**	.65**	.47**	.22*	.70**	.37**
SPP				-	.32**	.64**	.42**	.60**	.20*	.31
OOP					-	.24*	.20*	.27**	.07	-.03
FMPS						-	.82**	.61**	.64**	.44**
COM/DA							-	.35**	.34**	.13
PE/PC								-	.10	-.13
PS									-	.41**

Note. LSAS = Liebowitz Social Anxiety Scale; SIAS= Social Interaction Anxiety Scale; RRQ = Rumination Total Score - The Rumination Reflection Questionnaire; SOP = Self Oriented Perfectionism - Multidimensional Perfectionism Scale (MPS); SPP = Socially Prescribed Perfectionism - MPS; OOP = Other Oriented Perfectionism Scale - MPS; FMPS = Frost Multidimensional Perfectionism Scale (FMPS); COM/DA = Concern Over Mistakes and Doubting Actions Combined subscale – FMPS; PE/PC = Parental Expectations and Parental Criticisms subscale – FMPS; PS = Personal Standards subscale – FMPS; O = Organization subscale – FMPS.

* $p < .05$, ** $p < .01$

expectations/parental criticisms, organization, personal standards and doubting actions/concern over mistakes.

Rumination and SA. Confirming previous research and supporting results revealed in Study 1, there was a significant and positive correlation between rumination via the RRQ and SA via the LSAS and SIAS respectively ($r = .21, p < .05$ and $r = .40, p < .01$).

Rumination and trait perfectionism. Somewhat different from results in Study 1, where in the previously noted Table 7, rumination was significantly correlated with all subscales and facets of perfectionism except organization (O) and other oriented perfectionism (OOP), for Study 2 in previously noted Table 14, rumination was also not significantly related to personal standards. Rumination was however significantly correlated with self oriented perfectionism (SOP), socially prescribed perfectionism (SPP), total perfectionism via the FMPS, the combined parental expectations and parental criticisms subscale, and the combined concern over mistakes and doubting actions subscales.

Social anxiety and trait perfectionism. Upon examining the MPS' three facets of perfectionism in relation to SA via the LSAS and the SIAS, the LSAS was significantly and positively correlated with both SOP and SPP ($r = .22, p < .05$ and $r = .44, p < .01$) and the SIAS was significantly and positively correlated with SPP ($r = .40, p < .01$). Upon examining SA and perfectionism via the FMPS, as hypothesized, SA was positively correlated with perfectionism as assessed by the FMPS (Frost et al., 1990). Specifically, the LSAS was significantly and positively correlated with overall perfectionism ($r = .41, p < .01$), as well as all but the personal standards subscale of the

FMPS. In terms of the correlations between SA and perfectionism with the SIAS and the FMPS, overall perfectionism and SA were significantly correlated ($r=.42, p<.01$), and SA and the COM/DA subscale were also significantly correlated ($r=.51, p<.01$). There were no other significant relationships between the SIAS and the FMPS' other subscales. Thus, higher scores of SA were associated with increased reporting of overall perfectionism and some specific perfectionism subscales.

Mediation Analyses

Identical to the mediation analyses conducted in Study 1, to test if rumination would mediate the relationship between SA and trait perfectionism, a series of linear regressions were conducted as per Baron and Kenny (1986). The first path examined was the path between SA via the LSAS and perfectionism via the FMPS total, $\beta=.41, p<.001$. Next, the path between SA and rumination was examined, $\beta=.21, p<.05$, followed by the path between rumination and perfectionism, $\beta=.37, p<.001$. Lastly, the path between SA and perfectionism was reexamined once the mediator, rumination, was controlled for, $\beta=.34, p<.001$. There was not a significant decrease in betas comparing this last model with the first model (Sobel $z = .23, p=.82$). As a result, Baron and Kenny's mediation conditions were not met, and thus, rumination was not a significant mediating variable between SA and perfectionism in this study.

Comparing Dropouts and Completers on Pre-Manipulation Measures

Initially, t-tests were conducted to determine if there were any significant differences on the measures administered prior to the manipulation between participants who only completed Part 1 ($n=20$), and participants who completed both Part 1 and 2 of the present study ($n=81$). It should be noted that initially there were 36 participants in the

distraction condition, 34 participants in the rumination condition, and 31 participants in the control condition. However for Part 2 of this study, due to attrition, there were 27 participants that remained in the distraction condition, 30 participants in the rumination condition and 24 participants in the control condition. Table 15 shows that there were no significant differences on any of the measures assessed before the manipulation for dropouts as compared to study completers.

ANOVA: Testing for Initial Differences across Conditions

Oneway ANOVAs were conducted to test for any pre-existing differences on measures before the manipulation across conditions. Table 16 reveals that there were no significant differences across conditions on the SUDS1, SUDS2, SIAS, RRQ, FRMP and MPS facets, however there was a significant main effect of the LSAS, $F(2, 99)=3.65, p=.03$. Post hoc analyses for the LSAS revealed that those in the control condition were reporting significantly more SA than those in the distraction and rumination condition. The rumination and distraction conditions were not significantly different from one another. Thus, it appears that according to anxiety scores on the LSAS, those randomly assigned to the control condition were more anxious than participants in the other two conditions. Therefore, the LSAS was included as a covariate in subsequent analyses.

Manipulation Check

The manipulation check for this study was a measure comprised of three questions which were intended to assess levels of rumination and distraction. The first item was, “To what extent were you thinking about the speech you gave?”, the second was “To what extent were you dwelling on aspects of your speech?” and the third was,

Table 15.

Descriptive Statistics Comparing Dropouts and Completers on Baseline Measures

Scale	M (SD)	
	Dropouts (n =20)	Completers (n=81)
SUDS1	34.00 (22.21)	31.37 (21.85)
SUDS2	55.50 (24.63)	62.56 (20.50)
LSAS	107.90 (21.22)	110.10 (19.71)
SIAS	57.62 (11.90)	60.06 (9.51)
RRQ	46.10(7.71)	47.27 (6.12)
FMPS	109.05 (18.45)	105.82 (15.37)
SOP	60.90 (5.28)	60.61 (6.00)
SPP	60.25 (5.68)	63.16 (5.18)
OOP	58.95 (6.96)	61.86 (6.35)

Note. There were no significant differences in means for dropouts compared to completers.

SUDS1= Subjective Unit of Distress Scale measured pre-speech; SUDS2 = Subjective Unit of Distress Scale measured post-speech; LSAS = Liebowitz Social Anxiety Scale; SIAS = Social Interaction Anxiety Scale; RRQ = Total rumination score - The Rumination Reflection Questionnaire; FMPS = Perfectionism Total Score - Frost Multidimensional Perfectionism Scale (FMPS); SOP = Self Oriented Perfectionism-Multidimensional Perfectionism Scale (MPS); SPP = Socially Prescribed Perfectionism - MPS; OOP = Other Oriented Perfectionism - MPS.

Table 16

Means for Baseline Measures across Conditions (N=101)

Scale	M (SD)		
	Distraction(n=36)	Rumination(n=34)	Control(n=31)
SUDS1	27.72 (18.03)	33.06 (23.57)	35.45 (21.79)
SUDS2	54.08 (21.66)	64.00 (17.60)	63.65 (23.72)
LSAS	105.11 (16.71)_a	107.44 (18.70)_a	117.26 (20.59)_b
SIAS	55.19 (10.93)	55.03 (10.40)	59.58 (11.71)
RRQ	46.78 (6.82)	46.09 (5.98)	48.38 (6.43)
FMPS	104 (16.01)	107.29 (14.34)	108.32 (17.75)
SOP	61.30 (5.96)	61.09 (4.86)	59.48 (6.59)
SPP	62.69 (4.67)	62.76 (4.62)	62.25 (6.87)
OOP	58.61 (8.63)	57.08 (9.53)	58.39 (8.82)

Note. Means in the same row sharing common subscripts are not statistically different at $\alpha = .01$, according to Fisher's LSD procedure.

SUDS1 = Subjective Unit of Distress Scale measured pre-speech; SUDS2 = Subjective Unit of Distress Scale measured post-speech; LSAS = Liebowitz Social Anxiety Scale; SIAS = Social Interaction Anxiety Scale; RRQ = Total rumination score - The Rumination Reflection Questionnaire; FMPS = Perfectionism Total Score - Frost Multidimensional Perfectionism Scale (FMPS); SOP = Self Oriented Perfectionism Total Score - Multidimensional Perfectionism Scale (MPS); SPP = Socially Prescribed Perfectionism Total Score - MPS ; OOP = Other Oriented Perfectionism Scale - MPS.

* $p < .05$

“To what extent were you thinking of things completely unrelated to the speech you delivered?”. A Likert scale ranging from 0 (not at all) to 4 (very much), was used to assess participants’ responses.

Oneway ANOVAs were conducted to compare means for each question across conditions. It should be noted however, that the entire sample of participants did not complete this scale as it was added part way through the study. As such, data are available for only 64 participants on this measure. As presented in Table 17, results reveal that that the rumination and control conditions significantly differed from the distraction condition, but the rumination and control conditions did not significantly differ from one another. This was not surprising though, as those in the control condition were expected to engage in rumination, even without being encouraged to do so. To descriptively quantify these results, it should be noted that the mean for the distraction condition for thoughts unrelated to the speech corresponds with “very much” and “sometimes”, whereas the means for the rumination and control conditions for both thinking and dwelling about the speech correspond with “often”. Overall, results reveal that participants in the rumination and control condition were thinking and dwelling about their speech significantly more than those participants in the distraction condition.

ANOVA: Comparing State Anxiety across Conditions

It was hypothesized that there would be no significant differences across conditions in state anxiety before the manipulation (SUDS1 and SUDS2) but there would be differences in state anxiety following the manipulation (SUDS3). Specifically, after the manipulation, participants in the rumination condition were expected to report higher

Table 17.

Means for Manipulation Check Scale Items across Conditions (N=64)

Scale	M (SD)		
	Distraction (<i>n</i> =23)	Rumination (<i>n</i> =20)	Control (<i>n</i> =21)
Thinking	2.00 (1.20) _a	3.15 (1.13) _b	3.05 (1.16) _b
Dwelling	1.83 (1.30) _a	2.90 (1.21) _b	2.90 (1.17) _b
Unrelated	2.68 (1.06) _a	1.76 (1.09) _b	1.65 (1.46) _b

Note. Means in the same row sharing common subscripts are not statistically different at $\alpha = .01$, according to Fisher's LSD procedure.

Thinking = how much participants thought about their speech; Dwelling = how much participants were dwelling on their speech; Unrelated = how much participants thought of thing unrelated to their speech.

state anxiety scores than the other two conditions, those in the distraction condition were expected to report the lowest state anxiety scores, and those in the control condition were expected to report scores in between the rumination and distraction conditions. To test this hypothesis, state anxiety scores across conditions were assessed before the speech, after the speech and after the manipulation with the LSAS as a covariate. As expected, noted in Table 18, there were no significant differences across conditions with SUDS1 or SUDS2 (before the manipulation). However, after controlling for pre-existing differences in reported SA via the LSAS, there were still significant differences across conditions on state anxiety following the manipulation (SUDS3). See Figure 10. As hypothesized, those in the distraction condition reported the lowest state anxiety scores, those in the rumination condition reported the highest state anxiety scores, and those in the control condition reported state anxiety scores in between the rumination and distraction scores. However, while those in the rumination condition ($M=39.47$, $SD=21.53$) reported significantly more state anxiety than those in the distraction condition ($M=23.61$, $SD=19.44$), $F(2,99)=4.84$, $p=.01$, the control condition ($M=32.26$, $SD=18.83$) was not significantly different from the distraction or rumination conditions.

ANOVA: Comparing State Perfectionism across Conditions

It was hypothesized that there would be significant differences in state perfectionism scores across conditions. Specifically it was postulated that those in the rumination condition would report the highest state perfectionism scores, those in the distraction condition would report the lowest, and those in the control condition would report scores in between the rumination and distraction condition.

Table 18

Means for State Anxiety Assessment across Conditions (N=101)

Scale	M (SD)		
	Distraction (n =36)	Rumination (n =34)	Control(n =31)
SUDS1	27.72 (18.03) _a	33.06 (23.57) _a	35.45 (21.79) _a
SUDS2	54.08 (21.66) _a	64.00 (17.59) _a	63.65 (23.72) _a
SUDS3	23.61 (19.44) _a	39.47 (21.53) _b	32.26 (18.83) _{ab}

Note. Means in the same row sharing common subscripts are not statistically different at $\alpha = .01$, according to Fisher's LSD procedure.

SUDS1 = Subjective Unit of Distress Scale measured pre-speech; SUDS2 = Subjective Unit of Distress Scale measured post-speech; SUDS3 = Subjective Unit of Distress Scale measured post-manipulation.

Figure 10. State Social Anxiety Levels across Conditions.

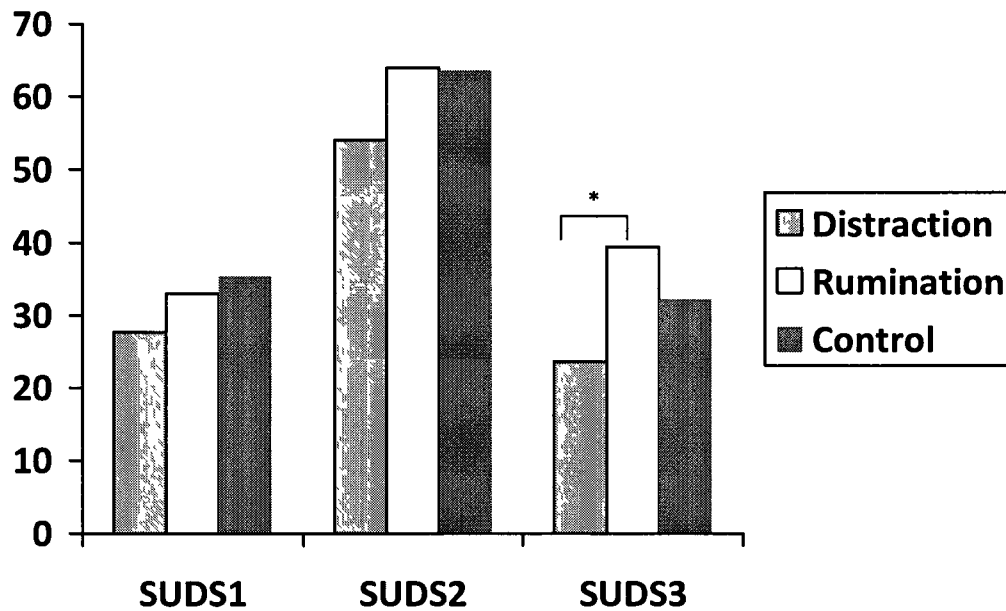


Figure 10. SUDS1 – Subjective Units of Distress Scale measured pre-speech; SUDS2 – Subjective Units of Distress Scale measured post-speech; SUDS3 – Subjective Units of Distress Scale measured post-manipulation. There are no significant differences in state anxiety across conditions at time 1 and time 2. At time 3, state anxiety scores for the rumination were significantly higher than the distraction condition. The rumination and control conditions did not significantly differ on state anxiety at time 3.

* $p < .05$

Thus, oneway ANOVAs were conducted comparing conditions on each state perfectionism measure, namely the Multiple Perfectionism Test (MPT), the state SPP measure and the state COM/DA measures. As previously noted, there were pre-existing differences in SA across conditions. Therefore to control for this, the LSAS was examined as a covariate. As shown in Table 19, there were no significant differences across the rumination, distraction and control conditions with any of the state perfectionism measures. This hypothesis was not supported.

ANOVA: Comparing Post-Event Rumination at Part 2 across Conditions

It was hypothesized that there would be significant differences in post-event rumination across conditions. Specifically, it was postulated that those in the rumination condition would report the highest post-event rumination at Part 2 followed by those in the control condition and then the distraction condition. Again, because there were noted differences in SA across conditions prior to the manipulation, the LSAS was examined as a covariate. Oneway ANOVAs were conducted to compare conditions on post-event rumination scores. As shown in Table 20, there were no significant differences across condition in regards to post-event rumination. Thus, this hypothesis was not supported.

Bivariate Correlations of State perfectionism and Post-Event Rumination

It was initially hypothesized that state perfectionism at Part 1 would be significantly and positively correlated with post-event rumination at Part 2 (two days after state perfectionism was initially assessed). Results in Table 21 reveal that state perfectionism via the MPT, State COM/DA and state SPP scales were significantly and positively correlated with the PEPQ and state COM/DA was significantly and positively correlated with the TQ-Neg, and significantly but negatively correlated with the TQ-Pos.

Table 19

Means for State Perfectionism Scales across Conditions (N=81)

Scale	M (SD)		
	Distraction (n=27)	Rumination (n=30)	Control (n=24)
MPT	18.85 (4.86)	19.27 (3.46)	18.00 (3.70)
State_SPP	52.40 (7.03)	54.36 (4.16)	54.25 (3.93)
State_COM/DA	32.62 (8.84)	32.60 (10.06)	33.58 (11.13)

Note. There were no significant differences.

MPT = State Perfectionism - Multiple Perfectionism Test; State_SPP = State Socially Prescribed Perfectionism score Multidimensional Perfectionism Scale (MPS); State COM/DA = State Concern Over Mistakes and Doubting Actions score – Frost Multidimensional Perfectionism Scale (FMPS).

Table 20

Means for Post-Event Rumination at Part 2 across Conditions (N=81)

Scale	Distraction	M (SD)	
		Rumination	Control
PEPQ	41.82 (18.98)	40.88 (17.18)	47.00 (17.56)
TQ-Pos	13.07 (5.00)	13.60 (5.02)	13.17 (4.96)
TQ-Neg	43.96 (12.90)	41.87 (12.90)	47.58 (11.85)

Note. There were no significant differences.

PEPQ = Post-Event Processing Questionnaire; TQ-Pos = Positive Thoughts Subscale - Thoughts Questionnaire (TQ); TQ-Neg = Negative Thoughts Subscale - TQ.

Table 21.

Bivariate Correlations among Rumination State Perfectionism and Post-Event Rumination (N=81)

	MPT	State COM/DA	State SPP	PEPQ	TQ-Pos	TQ-Neg
RRQ	.01	.24*	.08	.07	-.16	.13
MPT	-	.39**	.32**	.37**	-.02	.16
State COM/DA		-	.45**	.62**	-.22*	.39**
State SPP			-	.30**	-.17	.18

Note. MPT = State Perfectionism - Multiple Perfectionism Test; State_SPP = State Socially Prescribed Perfectionism score - Multidimensional Perfectionism Scale (MPS); State COM/DA = State Concern Over Mistakes and Doubting Actions score – Frost Multidimensional Perfectionism Scale (FMPS); PEPQ = Post-event Rumination – Post Event Processing Questionnaire; TQ-Pos = Post-event Rumination Positive Thoughts subscale - Thoughts Questionnaire (TQ); TQ-Neg = Post-event Rumination Negative Thoughts subscale - TQ.

* $p < .05$, ** $p < .01$

Thus, there appears to be support for this hypothesis. State perfectionism assessed at Part 1 was significantly related to post-event rumination at Part 2.

Exploratory Analyses

Although hypotheses were not developed for trait perfectionism, SA, or rumination at Part 1 in relation to post-event rumination at Part 2, these variables were examined nonetheless. Interestingly, as previously presented in Table 21 the MPT was significantly correlated with the other two state measures of perfectionism, but not with their corresponding trait subscales (see Table 22). Furthermore, it should be noted that state COM/DA was significantly but negatively correlated with TQ-Pos, however trait COM/DA was not. Lastly, it was interesting to see no significant relationships between rumination assessed at Part 1 and the post-event rumination assessed at Part 2 (PEPQ; $r=.07$, *ns* and TQ; $r=-.16$ to $.13$, *ns*). See previously noted Table 21.

Next, out of interest, three hierarchical regressions were carried out to examine possible predictors of post-event rumination via the PEPQ, TQ-Neg and TQ-Pos. Differences across conditions were not considered, as the main analyses of this study did not reveal significant differences in post-event processing across conditions. These regressions were first conducted with the SIAS and SUDS2 (state anxiety post-speech) entered into the first step, each trait perfectionism subscale and facet into the second step, and each state perfectionism subscale and facet into the third. In these tests, trait and state SPP and the MPT did not add anything significant to the models predicting post-event rumination, nor did any of the other trait subscales of perfectionism. As such, in

Table 22

Exploratory Bivariate Correlations: State and Trait Perfectionism (Part 1), Rumination (Part 1) and Post-Event Rumination (Part 2), (N=81)

Trait Perfectionism	State Perfectionism			Rumination			
	MPT	State SPP	State COM/DA	RRQ	PEPQ	TQ-Pos	TQ-Neg
SOP	.04	.03	.13	.14	.08	.12	.15
SPP	-.12	.20	.30*	.31**	.34**	.06	.34**
OOP	.02	-.04	.02	-.13	-.04	.25*	.03
FMPS	.17	.19	.38**	.29**	.25*	.06	.39**
PS	.18	.13	.10	.16	-.01	-.06	.04
O	.00	-.01	.02	.04	-.07	-.04	.13
COM	.18	.27*	.47**	.17	.31*	.00	.38**
DA	-.01	.02	.28*	.40**	.18	-.10	.32**
PE	.11	.11	.18	.16	.24*	.25*	.27*
PC	.09	.06	.22	.16	.24*	.17	.22*
COM/DA	.14	.23*	.49**	.30**	.32**	-.04	.43**
PE/PC	.12	.11	.22	.17	.27*	.23*	.28*

Note. MPT = State Perfectionism - Multiple Perfectionism Test; State_SPP = State Socially Prescribed Perfectionism - Multidimensional Perfectionism Scale (MPS); State COM/DA = State Concern Over Mistakes and Doubting Actions - Frost Multidimensional Perfectionism Scale (FMPS); COM/DA = Concern Over Mistakes and Doubting Actions subscale - FMPS; PEPQ = Post-event Rumination score – Post Event Processing Questionnaire; TQ-Pos = Post-event Rumination Positive Thoughts subscale - Thoughts Questionnaire (TQ); TQ-Neg = Post-event Rumination Negative Thoughts subscale - TQ; RRQ = Rumination total score - The Rumination Reflection Questionnaire; SIAS= Social Interaction Anxiety Scale.

* $p < .05$, ** $p < .01$

combination with this fact, the low internal consistencies noted in the present study's main analyses for the state SPP and MPT scales, and the smaller sample size for these analyses ($n=81$), these regressions were run a second time with only trait and state COM/DA as additional predictors. Regressions for trait SA, state anxiety and trait and state COM/DA are subsequently presented.

In the first step predicting positive post-event rumination, the model for trait SA and state anxiety accounted for 8.3% of the variance in TQ-Pos, and was a significant but negative predictor, $F(2, 78)=3.51, p<.05$. At the second step trait COM/DA perfectionism accounted for an additional 1.0% of the variance of TQ-Pos and was not statistically significant. At the third step, state COM/DA perfectionism accounted for an additional 1.0% of the variance in TQ-Pos, and was also not significant. See Table 23 for a summary table.

In the first step predicting negative post-event rumination, trait SA and state anxiety, accounted for 19.0% of the variance in TQ-Neg, and was statistically significant $F(2, 78)=9.13, p<.001$. At the second step, trait COM/DA perfectionism accounted for an additional 7.0% of the variance of TQ-Neg and was also significant $F(3, 77)=7.32, p<.01$. At the third step, state COM/DA perfectionism accounted for an additional 1.0% of the variance in TQ-Neg and this was not significant. See Table 24.

In the first step predicting post-event rumination, trait SA and state anxiety accounted for 30.3% of the variance in post-event rumination, and was statistically significant $F(2,78)=16.93, p<.001$. At the second step, trait COM/DA perfectionism accounted for an additional 1.3% of the variance of post-event rumination and was not significant. At the third step, state COM/DA perfectionism accounted for an additional

Table 23.

Summary of Hierarchical Regression Analysis for Variables Predicting Post-event Rumination: TQ- Pos

Variable	B	SE B	β
Step 1			
SIAS	-.10	.06	-.21*
SUDS2	-.03	.03	.13
Step 2			
SIAS	-.12	.06	-.25*
SUDS2	-.03	.03	.14
COM/DA	.07	.08	.11
Step 3			
SIAS	-.10	.06	-.22*
SUDS2	-.02	.03	-.10
COM/DA	.10	.08	.15
State COM/DA	-.07	.07	-.14

Note. R^2 Change = .07 for Step 1, .01 for Step 2 (ns), and .02 for Step 3 (ns).

* $p < .05$

SIAS = Social Interaction Anxiety Scale; COM/DA = Concern Over Mistakes and Doubting Actions subscale – Multidimensional perfectionism Scale (MPS); State COM/DA = State Concern Over Mistakes and Doubting Actions (MPS).

Table 24.

Summary of Hierarchical Regression Analysis for Variables Predicting Post-event Rumination: TQ-Neg

Variable	B	SE B	β
Step 1			
SIAS	.47	.14	.39**
SUDS2	.06	.07	.09
Step 2			
SIAS	.34	.14	.28**
SUDS2	.03	.07	.05
COM/DA	.51	.19	.30**
Step 3			
SIAS	.30	.15	.35*
SUDS2	.03	.07	.00
COM/DA	.44	.20	.30*
State COM/DA	.17	.17	.13

Note. R^2 Change = .18 for Step 1, .08 for Step 2, and .01 (ns) for Step 3.

* $p < .05$, ** $p < .01$

SIAS = Social Interaction Anxiety Scale; COM/DA = Concern Over Mistakes and Doubting Actions subscale – Multidimensional perfectionism Scale (MPS); State COM/DA = State Concern Over Mistakes and Doubting Actions (MPS).

11.1% of the variance in post-event rumination which was statistically significant $F(4,76)=15.14, p<.001$. See Table 25 for a summary table.

Discussion

The intentions of Study 2 were to experimentally test the effects of rumination following an anxiety induction on state anxiety and state perfectionism, as well as post-event rumination two days after the induction task. Furthermore, Study 2 sought to provide support for the correlations found in Study 1: by re-examining the relationships among SA, rumination and perfectionism, and re-examining rumination as a mediation variable between SA and perfectionism. Overall, in Study 2, there were three main and novel hypotheses. It was expected that those in the rumination condition as compared to those in the control and distraction conditions would: (1) report elevated state anxiety scores immediately following the manipulation; (2) report elevated state perfectionism scores; and (3) report elevated post-event rumination scores two days later.

As previously mentioned, Study 2 sought to examine the correlations among SA, perfectionism and rumination, and rumination as a mediator between SA and perfectionism, in hopes of lending support to results noted in Study 1. Correlations among SA, rumination and perfectionism in Study 2 were relatively consistent with correlations noted in Study 1 however, there were some marginal differences across Study 1 and Study 2, in terms of the relations between SA and perfectionism.

In particular, Study 1 revealed the LSAS as significantly related to SOP, FMPS and COM/DA, but in Study 2 the LSAS was additionally related to SPP, and PE/PC. Based on these findings, there are more aspects of perfectionism related to SA in a high SA sample as compared to a general sample.

Table 25.

Summary of Hierarchical Regression Analysis for Variables Predicting Post-event Rumination – PEPQ

Variable	B	SE B	β
Step 1			
SIAS	.51	.18	.30**
SUDS2	.31	.09	.35**
Step 2			
SIAS	.44	.19	.36*
SUDS2	.29	.09	.34*
COM/DA	.27	.25	.11
Step 3			
SIAS	.25	.18	.15
SUDS2	.16	.09	.18
COM/DA	-.04	.24	-.02
State COM/DA	.82	.21	.45**

Note. R^2 Change = .20 for Step 1, .02 (ns) for Step 2, and .18 for Step 3

* $p < .01$

SIAS= Social Interaction Anxiety Scale; COM/DA = Concern Over Mistakes and Doubting Actions subscale – Multidimensional perfectionism Scale (MPS); State COM/DA = State Concern Over Mistakes and Doubting Actions (MPS).

Next, as previously mentioned, it should be discussed that rumination was not found to be a significant mediator between SA and perfectionism in Study 2. Although this finding does not support the mediation results in Study 1, the lack of rumination significantly mediating the relation between SA and perfectionism in Study 2 may be due to the restricted range in SA scores (participants in Study 2 were recruited for elevated SA).

It should also be noted that the reliability analyses for Study 2 revealed low internal consistencies for the MPS facets of perfectionism. Although the low alphas for the MPS in Study 2 were not ideal, Schmitt (1996) discussed how low alphas are not always a bad thing. Specifically, Schmitt noted that “if a measure has other desirable properties such as meaningful content, coverage of some domain and reasonable unidimensionality... low reliability may not be a major impediment to its use” (p. 352). Furthermore, Schmitt (1996) also went on to argue that there is no exact level of an acceptable or unacceptable alpha, and in some instances a scale with a low alpha can still be useful.

Moving to the main hypotheses of Study 2, in terms of rumination, previous research has suggested that socially anxious individuals tend to ruminate following an anxiety provoking event (Kocovski et al., 2005). Based on this premise it was hypothesized that participants placed in the rumination condition, following the anxiety induction task, would have reported the highest state social anxiety scores of the three conditions. It was also expected that those in the distraction condition would report the lowest state anxiety scores, and those in the control condition would report scores somewhere in between the rumination and distraction conditions (these individuals would

likely be ruminating, but not quite to the extent of those actively encouraged to do so). These hypotheses were partially supported. Although there were no differences in rumination levels between participants in the control and distraction conditions and between participants in the control and rumination conditions, participants in the rumination condition reported significantly more state anxiety than those in the distraction condition following the manipulation. These findings corroborate the previously noted research of Blagden and Craske (1996), who also examined distraction as a tool to reduce anxiety following an anxiety induction, and found that distraction, in place of rumination significantly reduced participants' reporting of state anxiety, and negative affect that is often coupled with anxiety.

Upon examining the manipulation check scale, it was noted that those in the rumination and control conditions were ruminating significantly more than those in the distraction condition were during the manipulation. However, the rumination and control conditions did not significantly differ on levels of rumination during this manipulation. This supports Kocovski and colleagues' (2005) research that socially anxious individuals tend to engage in rumination unless encouraged otherwise. It should also be noted however, that although participants in the control condition were expected to ruminate to some extent, those in the rumination condition should have reported slightly elevated levels of rumination as compared to the control condition as they were actively encouraged to re-think negative feelings, thoughts and bodily sensations regarding their speech. In the present study, means for the rumination and control conditions on reported levels of rumination are identical. A possible explanation for this is that although those in the control condition were not actively encouraged to ruminate, they were told:

“Before you can move forward and complete the last part of this study, I will need to score some of your previous responses. It may take me several minutes to do so. Please take a seat and wait quietly. I will let you know when I am finished so that you can move forward”

Perhaps these statements primed participants to feel as though they were actively being evaluated, which unintentionally resulted in them ruminating about their previous responses and their speech while they waited.

Moving forward, another intention of the present research was to test for differences across conditions on state perfectionism following the manipulation. Specifically, it was postulated that those in the rumination condition would have reported the highest state perfectionism scores, followed by the control and then distraction conditions. These expectations were based on noted evidence that SA and rumination and SA and perfectionism are significantly and positively correlated, and the mediation results from Study 1, whereby rumination was supported as a mediating variable between SA and perfectionism. To test these hypotheses, oneway ANOVAs examining state perfectionism across conditions were conducted. Results revealed that there were no significant differences on state perfectionism across conditions. These unexpected findings suggest that at least under these circumstances, rumination was not a causal variable impacting state perfectionism in a socially anxious sample. These unexpected findings are not without implications.

Previous research has demonstrated that rumination is a known by-product and maintenance factor in SA (Clark & Wells, 1995) and the present research has provided evidence that rumination and perfectionism, SA and perfectionism, and SA and

rumination are significantly and positively correlated. However, rumination failed to significantly impact state perfectionism in this study. It is conceivable that state perfectionism was not effectively assessed in this research (based on the low alphas for the MPT and state SPP scales and lack of significant correlations between the MPT and the FMPS, and state SPP with the trait SPP). Alternatively, it is also possible that rumination does not affect reported levels of state perfectionism. Furthermore, because there were no significant differences across the rumination, distraction and control conditions on post-event rumination, in addition to there being no significant differences on state perfectionism (state SPP, state COM/DA and the MPT), results from this study indicate that it might be better to experimentally test the effects of perfectionism on rumination and post-event rumination in a sample of socially anxious individuals, rather than to test the effects of rumination on state perfectionism. In other words, rather than testing if rumination is a mediating variable between SA and perfectionism, or if rumination impacts state perfectionism in a group of socially anxious individuals, it would also make sense to test the effects of perfectionism on rumination or post-event rumination in a socially anxious sample.

For example, Abbott and Rapee (2004), examined socially anxious participants in comparison to a control group, and assessed their self appraisals and post-event rumination in regards to a speech task. They noted that socially anxious participants ascribed more negative self appraisals to their performance on the speech task and ruminated more about the speech task than participants in a control condition did. These negative self appraisals were noted over one week following this speech task (Abbott & Rapee). Based on the exploratory results in Study 2 that revealed COM/DA as a

significant predictor of post-event rumination above and beyond the predictive effects of social anxiety and state anxiety following an anxiety inducing event, manipulating perfectionism in a study like Abbott and Rapee's (2004), before testing post-event rumination and negative thoughts, could provide further evidence attesting to or against the idea that perfectionism maintains SA by increasing rumination.

Moreover, the correlations from the present study revealed that higher scores on all three scales of state perfectionism were significantly and positively related to post-event processing via the PEPQ, and the state COM/DA scale was significantly and positively correlated with negative thoughts in the post-event period, and significantly but negatively correlated with positive thoughts in the post-event period. These results suggest that when participants were more concerned with a poor performance on their speech, they reported more negative post-event rumination. Accordingly, like Abbott and Rapee noted, it is possible that these participants developed a negative self appraisal regarding their speech performance, which resulted in elevated PEP thoughts.

Lastly, the remaining exploratory analyses should be discussed, as they too are not without implications. Previous research has examined predictors of post-event rumination or post-event processing (PEP). For instance, McEvoy and Kingsep (2006) examined depression, anxiety, stress, and state anxiety, as predictors of PEP in a socially anxious sample. They noted that only state anxiety was a significant predictor of PEP. Similarly, Kocovski and Rector (2008) found that state anxiety during an exposure task within CBT was related to PEP during the week following the therapy session. Other research looking at predictors of PEP noted fear of negative evaluation after a social interaction was a significant predictor of PEP, and PEP itself, immediately after a social

interaction significantly predicted post-event rumination up to one week later (Fehm et al., 2007). Additionally, Kocovski and Rector (2007) examined several factors as possible predictors of PEP and found that the tendency to ruminate about anxiety symptoms was a significant predictor of the extent to which participants engaged in PEP related to a social situation (e.g., party, presentation). Moreover, the type of situation influenced the level of PEP, with more PEP being reported for presentations compared to parties.

To date, although the aforementioned studies reveal that there has been research examining predictors of post-event rumination, a literature search did not result in any published work that examined perfectionism as a predictor of post-event rumination. Hence, the exploratory analyses in Study 2 are very relevant to the SA literature. Exploratory hierarchical regressions in study 2 revealed that trait COM/DA in addition to SA, was a significant predictor of negative post-event rumination (TQ-Neg) and state COM/DA in addition to SA, was a significant predictor of post-event rumination as assessed by the PEPQ. Although there was not a control group to compare these findings with, it is possible that perfectionism is leading to greater rumination and as such, is a maintenance factor in SA. If this is the case, because post-event rumination is coupled with anticipatory anxiety; anxiety that arises before future social interactions or performances, stemming from recollections of previous interactions or performances, those with SA and elevated COM/DA typed perfectionism are likely to experience increased negative post-event rumination, which in turn, will affect SA.

Although it seems surprising that trait COM/DA and not state COM/DA was a significant predictor of TQ-Neg, and the reverse was true for COM/DA as a predictor of

the PEPQ, there is a plausible explanation for this. Although the TQ was assessing post-event thoughts about the speech, not every item specifically referenced the speech. Thus, it makes sense that the trait COM/DA was a significant predictor of post-event rumination for this scale, as the trait COM/DA assessed concerns and doubting actions for a variety of things and not just public speaking. On the other hand, the PEPQ scale is comprised of all but one negative post-event rumination item and almost every item on this scale made specific reference to the speech. This was also the case for the state COM/DA scale, whereby participants were responding only to concern over mistake and doubting action items specifically pertaining to their speech. In this way, it makes sense why state COM/DA and not trait COM/DA was a significant predictor of post-event rumination as assessed by the PEPQ.

Limitations and Future Research

The present research is not without limitations. One limitation of this research was that there were noted differences in SA across conditions. Although SA was considered as a covariate in the relevant analyses, it would have been more ideal to have conditions that did not significantly differ, rather than having to examine the LSAS as a covariate. Also, the present research was conducted with only socially anxious participants. It would have been better to have a low social anxiety group, in addition to the high social anxiety group.

Another limitation of the present research was the low alphas for some of the scales used in Study 2 (the MPS' three facets of perfectionism, the state SPP scale and the MPT). Although previous research has revealed good internal consistency for the MPS, it is possible that some of the items on this measure were problematic for the

participants in the present study. A possible reason for this is that, in Study 2, like Study 1, the MPS was delivered to participants after the FMPS. As such, participants might have responded to this scale with haste, if they felt they already responded to similar items. Future research using both scales should counterbalance them. It should also be noted that although the three MPS facets revealed low internal consistency in this sample, relationships with these facets and other variables were still as predicted. Thus, analyses with this scale should not be discounted but should be interpreted with caution.

In regards to the MPT (the only published state perfectionism scale), this measure has not been used again in any other published research, which suggests a different scale to assess state perfectionism would be helpful. Lastly, the low alpha for the state SPP scale should be discussed. As previously noted, not only did the state SPP scale (created for the present research) have a low alpha (.56), but it was also not significantly correlated with the trait SPP scale. Based on these results, it appears that state SPP was not effectively assessed in Study 2, which again lends support for the need of a different and more effective state perfectionism assessment tool.

There was another concern regarding the assessment of state perfectionism in the present study, namely the use of modified items. State perfectionism was assessed via the MPT, and state SPP and COM/DA subscales. Since the MPT was only used to assess state perfectionism, participants only responded to these items once (they had not seen these items or a variation of these items before). However, because items on the state SPP and state COM/DA scales were modified versions of the trait SPP and COM/DA subscales, it is possible that participants recalled aspects of these items/scales. If this was the case, participants could have been attempting to respond to the items the same way as

they had previously responded to the trait items. Again, if this was the case, the effects of the manipulation might have been decreased.

Another limitation to the present research was the 60-minute duration of participation time for Part 1. Although participants were made aware of this time commitment prior to signing up for the study, it is possible that towards the end, participants were becoming bored. Throughout Study 2, participants could view a “progress bar” at the bottom of each page, letting them know how far along in the study they were. This was mainly included so participants could keep track of their progress and effectively pace themselves while responding to items. In hindsight this may have been a drawback of Study 2, as earlier research has shown that individuals can become bored if they are expecting a change in situation, specifically if they are anticipating moving from an undesirable situation to a more desirable situation (Conrad, 1997). Thus, because the state perfectionism measures were the last measures presented to participants, it is possible that participants were not allocating the appropriate attention to these items.

A final limitation to this study was the online aspect of Part 2. Although completing follow-up questionnaires online is more convenient and appealing to participants than in lab studies are, depending on the environment that participants chose to finish these follow-up measures in, they might have been distracted.

With respect to directions for future work, researchers might want to consider looking at rumination again as a variable that could impact perfectionism in individuals with SA, but using different scales or other methods to assess state perfectionism. Results from the present research also suggest that researchers might want to consider examining

perfectionism as a variable to experimentally manipulate and examine the effects it has on SA and post-event rumination.

It should also be noted that although rumination was not found to significantly impact state perfectionism or post-event rumination, this study did reveal that rumination significantly impacted state anxiety following the anxiety induction (which was predictive of post-event rumination). This is especially relevant, as previously it was mentioned that state anxiety is a significant predictor in post-event rumination (McEvoy & Kingsep, 2006). Thus, these results in Study 2 highlight the continued need for researchers to target rumination in treatments for social anxiety.

General Discussion

The central goal of this research was to examine the relationships among SA, rumination and perfectionism, and to test the effects of rumination on perfectionism. This research postulated that increased SA would lead to increased rumination, which in turn would lead to increased perfectionism, and that rumination following an anxiety provoking event would be responsible for elevated state perfectionism, state anxiety and post-event rumination in a socially anxious sample.

Results, implications, and conclusions made from these two studies are subsequently presented. Significant and positive correlations were noted between SA and rumination, rumination and perfectionism, and perfectionism and SA, at Study 1 and Study 2. Also, in Study 1, rumination was supported as a mediating variable between SA and perfectionism. However in Study 2 there was no evidence to support rumination as a causal variable impacting state perfectionism or post-event rumination in socially anxious individuals. Nonetheless, it is important to note that when manipulated, rumination

following an anxiety inducing event resulted in participants reporting significantly higher levels of state anxiety as compared to those participants encouraged to distract their attention. Although rumination might not have been an influential variable on participants' reporting of state perfectionism or post-event rumination two days later, the effects of rumination on state anxiety should not be overlooked. In fact, this finding provides evidence for a continued need for clinicians to focus on rumination in SA treatments.

Moving on, since data was collected from a general sample for Study 1 and then from a socially anxious sample for Study 2, there were some differences in how SA was related to rumination and perfectionism across these two studies. As previously noted, more aspects of perfectionism were related to SA in Study 2 which examined a socially anxious sample. This suggests that the more perfectionistic someone with SA is, the more SA they will report.

Moving forward, state perfectionism in Study 2 was also found to be significantly and positively correlated with SA and with post-event rumination, two days later. Thus, this research provides support for testing a different model than was proposed in Study 1, that increased perfectionism might be responsible for increased SA or post-event rumination. This idea is upheld by the research of O'Connor, O'Connor, and Marshall (2007) who showed SPP partially mediated the relationship between rumination and issues such as hopelessness, generalized health issues, and depression. This idea is also supported by additional research, whereby in a clinical review of perfectionism, Egan, Wade, and Shafran (2011), noted elevated perfectionism was also related to several anxiety disorders such as panic disorder, social anxiety disorder, and some types of

obsessive compulsive disorder. Furthermore, according to Harvey and colleagues (2004), perfectionism has also been noted as a risk factor for several psychological disorders (e.g., eating disorders).

The exploratory analyses of the present research also bear implications. As previously noted, concern over mistakes and doubting actions (COM/DA) perfectionism was found to be a significant predictor of negative post-event rumination (outside the predictive effects of SA). This is the first known study to note COM/DA as a predictor of PEP. It seems sensible though, that if an event or interaction is unimportant to an individual or that individual is not concerned with their performance (e.g., making mistakes), then that individual would be less likely to re-think that event or interaction at a later time. The opposite of this idea holds true for an individual who cares very much about making mistakes, or doubts themselves often. If making mistakes is highly concerning to an individual, then it seems sensible that this individual would be more likely to re-think this event or interaction at a later time. Thus, the exploratory results from Study 2 support the idea that perfectionism may maintain social anxiety by leading to greater rumination.

It might also be possible that perfectionism could affect treatment success for SA. In fact, Lundth and Ost (2001) examined perfectionism among other variables in a socially anxious (clinical) sample before, during and after CBT. They noted that treatment responders showed significantly less attentional bias for perfectionism. The non-responders also showed an equal reduction in perfectionism, but their perfectionism scores were very high initially, and their post-treatment scores were similar to the pre-treatment levels of the treatment responders. These results suggest that elevated levels of

perfectionism might have been a reason why some participants did not respond well to the CBT, whereas those with lower levels of perfectionism did. Also supporting this idea is the previously noted work of Ashbaugh et al. (2007), who found that treating SA with CBT resulted in a decrease in treatment responders' overall perfectionism scores on the Frost Multidimensional Perfectionism Scale (1990) and a significant decrease in concern over mistakes and doubting actions. Importantly, they also examined changes in overall perfectionism and COM/DA as predictors of treatment outcome. Ashbaugh and colleagues found that change in overall perfectionism was not a significant predictor of decreased SA after CBT, but change in concern over mistakes approached significance and change in doubting actions was a significant predictor of decreased SA.

Accordingly, it might be beneficial for clinicians to assess perfectionism before, during and after treatment as it appears that perfectionism might impede the effects of treatment.

In addition to the clinical implications of the present research, Study 2 also brings to attention a clear need for more effective and reliable state perfectionism assessment tools. To date, there is only one published state perfectionism scale (with low internal consistency) and as such, a more reliable and valid scale would be beneficial not only to those researching perfectionism and SA, but also perfectionism and other psychopathologies.

Overall, while rumination did not lead to elevated state perfectionism or post-event processing, rumination did lead to greater state anxiety (which was predictive of post-event rumination), and greater state perfectionism (COM/DA) was predictive of increased negative post-event rumination two days later. Given the impact of rumination on state anxiety in the present study, there is continued support for targeting rumination

in treatments for social anxiety. Also, given the relationship between state perfectionism and post-event rumination, this study provides support for the use of strategies to target state perfectionism as a possible way of reducing post-event rumination. The actual use of such strategies, including the potential for such strategies to lead to a reduction in post-event rumination, still requires testing.

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Appendix A**PREP Sign-up Sheet: Study 1**

Title: Personality and Social Interaction.

Researcher: Jaclyn Brown

Supervisor: Dr. Nancy Kocovski

Credit: .25 credit

Description of Study: The purpose of this study is to examine aspects of personality and how such aspects might impact social interactions. This study is available online, requiring 230 participants to respond to various questionnaires. It will take approximately 30 minutes to complete.

Appendix B

Demographic Questionnaire

What is your sex/gender? _____

What is your age? _____

What is the *highest* level of education that you have completed? (check only one)

Completed part of high school

Graduated from high school

Completed some college or university

Graduated from university:

Undergraduate degree

Masters degree

Doctoral degree

Other professional degree (e.g., medical, law)

Graduated from college

What year of study are you currently in?

1st year

2nd year

3rd year

4th year

Other (*Please describe*): _____

What is your current major? _____

What is your relationship status?

Single Married Cohabiting

Separated Divorced Widow(er)

What is your occupational status?

Unemployed Employed-full time Employed-part time

Student- full time Student-part time Other _____

(please specify)

What race or cultural group do you identify with the most?

White/Caucasian

Arab

Chinese

Japanese

African American

Korean

Filipino

Aboriginal

Latin American

West Asian (e.g., Afghan, Iranian, etc.)

South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)

Other (please specify) _____

Appendix C

Multidimensional Perfectionism Scale (MPS)

Please select options that best correspond to your agreement with each of the statements below:

- | | | | | | | |
|--------------------------|---|---|-----------------------------------|---|---|-----------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Strongly disagree</i> | | | <i>Neither agree nor disagree</i> | | | <i>Strongly agree</i> |
1. When I am working with something, I cannot relax until it is perfect
 2. I am not likely to criticize someone for giving up to easily*reverse score
 3. It is not important that the people I am close to are successful*reverse score
 4. I seldom criticize my friends for accepting second best*reverse score
 5. I find it difficult to meet others expectations of me
 6. One of my goals is to be perfect in everything I do
 7. Everything that others do must be of top-notch quality
 8. I never aim for perfection in my work*reverse score
 9. Those around me readily accept that I can make mistakes too*reverse score
 10. It doesn't matter when someone close to me does not do their absolute best.
*reverse score
 11. The better I do, the better I am expected to do
 12. I seldom feel the need to be perfect*reverse score
 13. Anything I do that is less than excellent will be seen as poor work by those around me
 14. I strive to be as perfect as I can be
 15. It is very important that I am perfect in everything that I attempt
 16. I have high expectations for people who are important to me
 17. I strive to be the best at everything I do
 18. The people around me expect me to succeed at everything I do
 19. I do not have high standards for those around me*reverse score
 20. I demand nothing less than perfection from myself.
 21. Others will like me even if I don't excel at everything
 22. I can't be bothered with people who won't strive to better themselves
 23. It makes me uneasy to see an error in my work
 24. I do not expect a lot from my friends*reverse score
 25. Success means that I must work even harder to please others
 26. If I ask someone to do something, I expect it to be done flawlessly*reverse score
 27. I cannot stand to see people close to me make mistakes*reverse score
 28. I am perfectionistic in setting goals*reverse score

29. The people who matter to me should never let me down
30. Others think I am okay, even when I do not succeed
31. I feel that people are too demanding of me*reverse score
32. I must work to my full potential at all times*reverse score
33. Although they may not show it, other people get very upset when I slip up
34. I do not have to be the best at whatever I am doing
35. My family expects me to be perfect*reverse score
36. I do not have very high goals set for myself
37. My parents rarely expect me to excel in all aspects of my life
38. I respect people who are average
39. People expect nothing less than perfection from me*reverse score
40. I set very high standards for myself*reverse score
41. People expect more from me, than I am capable of giving*reverse score
42. I must always be successful at school or work
43. It does not matter to me when a close friend does not try their hardest
44. People around me think I am still competent, even if I make a mistake
45. I seldom expect others to excel at whatever they do

Appendix D

Frost Multidimensional Perfectionism Scale

Please select options that best correspond to your agreement with each of the statements below:

- | 1 | 2 | 3 | 4 | 5 |
|--------------------------------------------------------------------------------------------------|---|-----------------------------------|---|--------------|
| <i>Disagree</i> | | <i>Neither agree nor disagree</i> | | <i>Agree</i> |
| 1. My parents set very high standards for me | | | | |
| 2. Organization is very important to me | | | | |
| 3. As a child, I was punished for doing things less than perfectly | | | | |
| 4. If I do not set the highest standards for myself, I am likely to end up a second-rate person | | | | |
| 5. My parents never try to understand my mistakes | | | | |
| 6. It is important to me that I am thoroughly competent in what I do | | | | |
| 7. I am a neat person | | | | |
| 8. I try to be an organized person | | | | |
| 9. If I fail at school, I am a failure as a person | | | | |
| 10. I should be upset if I make a mistake | | | | |
| 11. My parents want me to be the best at everything | | | | |
| 12. I set higher goals than most people | | | | |
| 13. If someone does a task at school better than I do, then I feel as if I failed the whole task | | | | |
| 14. If I fail partly, it is as bad as being a complete failure | | | | |
| 15. Only outstanding performance is good enough in my family | | | | |
| 16. I am good at focusing my efforts on attaining my goal | | | | |
| 17. Even when I do something very carefully, I often feel that it is not quite right – | | | | |
| 18. I hate being less than best at things | | | | |
| 19. I have extremely high goals | | | | |
| 20. My parents expect excellence from me | | | | |
| 21. People will probably think less of me if I make a mistake | | | | |
| 22. I never feel that I can meet my parents' expectations | | | | |
| 23. If I do not do as well as other people, it means I am an inferior being | | | | |
| 24. Other people seem to accept lower standards from themselves than I do | | | | |
| 25. If I do not do well all the time, people will not respect me | | | | |
| 26. My parents have always had higher expectations for my future than I have | | | | |
| 27. I try to be a neat person | | | | |
| 28. I usually have doubts about the simple everyday things that I do | | | | |
| 29. Neatness is very important to me | | | | |
| 30. I expect higher performance in my daily tasks than most people | | | | |
| 31. I am an organized person | | | | |
| 32. I tend to get behind in my work because I repeat things over and over | | | | |
| 33. It takes me a long time to do something "right" | | | | |
| 34. The fewer mistakes I make, the more people will like me | | | | |
| 35. I never feel that I can meet my parents' standards | | | | |

Appendix E

Liebowitz Social Anxiety Scale (LSAS)

For each question, please select a numerical value to indicate the degree to which you feel the statement is characteristic of you.

Fear or Anxiety:

- 0 = None
- 1 = Mild
- 2 = Moderate
- 3 = Severe

Avoidance:

- 0 = Never (0%)
- 1 = Occasionally (1—33%)
- 2 = Often (33—67%)
- 3 = Usually (67—100%)

1. Telephoning in public. – Performance (P)
2. Participating in small groups. (P)
3. Eating in public places. (P)
4. Drinking with others in public places. (P)
5. Talking to people in authority. – Social interaction (S)
6. Acting, performing or giving a talk in front of an audience. (P)
7. Going to a party. (S)
8. Working while being observed. (P)
9. Writing while being observed. (P)
10. Calling someone you don't know very well. (S)
11. Talking with people you don't know very well. (S)
12. Meeting strangers. (S)
13. Urinating in a public bathroom. (P)
14. Entering a room when others are already seated. (P)
15. Being the center of attention. (S)
16. Speaking up at a meeting. (P).
17. Taking a test. (P)
18. Expressing a disagreement or disapproval to people you don't know very well. (S)
19. Looking at people you don't know very well in the eyes. (S)
20. Giving a report to a group. (P)
21. Trying to pick up someone. (P)
22. Returning goods to a store. (S)
23. Giving a party. (S)
24. Resisting a high pressure salesperson. (S)

Appendix F**Rumination and Reflection Questionnaire (RRQ) – Rumination Subscale**

Indicate the degree to which you agree with the following statements:

1. My attention is often focused on aspects of myself I wish I'd stop thinking about.
2. I always seem to be rehashing in my mind recent things I've said or done.
3. Sometimes it is hard for me to shut off thoughts about myself.
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened.
5. I tend to "ruminate" or dwell over things that happen to me for a really long time afterward.
6. I don't waste time rethinking things that are over and done with. *reverse score
7. Often I'm playing back over in my mind how I acted in a past situation.
8. I often find myself re-evaluating something I've done.
9. I never ruminate or dwell on myself for very long. * reverse score
10. It is easy for me to put unwanted thoughts out of my mind.
11. I often reflect on episodes in my life that I should no longer concern myself with.
12. I spend a great deal of time thinking back over my embarrassing or disappointing moments.

Appendix G

Wilfrid Laurier University Informed Consent Form: Study 1

Personality and Social Interaction

Jaclyn Brown and Dr. Nancy Kocovski, Department of Psychology, Wilfrid Laurier University

You are invited to participate in an entirely online research study. The purpose of this study is to further investigate social anxiety, which is the type of anxiety experienced when one fears being judged by others. The principal researcher is Jaclyn Brown, a graduate student in the Department of Psychology, and her research supervisor, Dr. Nancy Kocovski, Assistant Professor in the Department of Psychology.

INFORMATION

Your participation in this study will involve the completion of online questionnaires. The questionnaires will be used to assess social anxiety and aspects of your personality. It is expected that 230 students recruited through PREP will be participating in this online research, which will take roughly 30 minutes of your time. The study cannot be fully explained at this time, but the full details of the study will be explained following the conclusion of your participation in this research. Results will be emailed to participants through PREP upon the study's completion.

RISKS

There are no physical risks associated with the present study; however, you may feel slight fatigue or mild discomfort of your eyes from working at a computer monitor. Foreseeable psychological risks may include feelings of anxiety that may arise from the surveys, however these feelings are normal and should only be temporary. You are free at any time to omit answers and/or withdraw from this study. If you are experiencing any concerns about social anxiety, please contact Dr. Nancy Kocovski (nkocovski@wlu.ca) and/or Counseling Services (519) 884-0710 extension 2338, 2nd floor, Student Services Building, (<http://www.mylaurier.ca/counselling>; 22couns@wlu.ca). Please note that Counseling Services on campus are free and confidential.

BENEFITS

In addition to receiving course credit, you will have the benefit of participating in psychological research which may help us to better understand social anxiety.

CONFIDENTIALITY

All information that is obtained from you during the course of this research is completely confidential and will not be shared with anyone other than the researcher (Jaclyn Brown) and the research supervisor (Dr. Nancy Kocovski), however because this project employs e-based data collection techniques, the confidentiality and privacy of data cannot be guaranteed during web based transmission. Student IDs will only be attached to consent forms for participation credit to be assigned. Once participants agree to the study, they will be assigned a new anonymous ID that will be associated with subsequent data collected. All electronic information (e.g., answers to questions) will be anonymous and only identified by the same research identification number in a

password-protected computer file. Your name will not appear in this file. There will be no identifying information on the data.

If you complete the study, electronic data acquired in this research will be retained indefinitely. If you choose to withdraw from the study at any time your data will be deleted. Although the results of this study may be published, they will be reported in a way that makes it impossible to identify individual participants. Only aggregate data will be presented. As such, your specific scores will not be made available to you, though a general report of the study's findings will be made available to you.

COMPENSATION

For participating in this study you will receive 0.25 credits. Other ways to earn the same amount of credit are to complete a journal article review or other research studies (guidelines are available in the general psychology office, N2006).

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study) you may contact the researcher, Jaclyn Brown (brow2880@wlu.ca) or at (519) 884-0710 ex. 2587, N2059 or the research supervisor, Dr. Nancy Kocovski (nkocovski@wlu.ca) at (519) 884-0710 ex. 3519, office N2025. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair Research Ethics Board and Associate Professor (Social Work), Wilfrid Laurier University, at 519-884-1970 ext.5225, or by email at rbasso@wlu.ca

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be deleted. You may withdraw from the study at any time without penalty. You have the right to omit any question(s)/procedure(s) you choose.

FEEDBACK AND PUBLICATION

The results of this research may be presented at conferences or submitted for publication. The results may also be written up for partial fulfillment of Jaclyn Brown's Master of Arts degree.

You will be sent information about the final results via email by April 1, 2011 and the results will be posted outside the psychology department main office.

CONSENT

I have read and understand the above information. Please print a copy of this form. I agree to participate in this study.

Yes, I agree

No, I do not agree

Appendix H

Wilfrid Laurier University Debriefing Form Study 1

Personality and Social Interaction –
Jaclyn Brown and Dr. Nancy Kocovski, Department of Psychology

It is **very important** that you read this information. Please take some time to go over it carefully. The full details of the purpose of this study was not explained to you in the consent form, but is explained below.

Although the present study's full intentions were not revealed in the consent form as to control for participants responding in a socially desirable manner; the present study's intentions were to examine the relationships among social anxiety, rumination and socially prescribed perfectionism. Social anxiety is characterized by unwarranted fears of negative evaluation or judgments from others while interacting in social situations. Rumination refers to dwelling on situations and socially prescribed perfectionism is a personality trait or tendency to believe that others maintain very high expectations of you. The specific goal of this study was to determine if social anxiety leads to greater socially prescribed perfectionism which in turn leads to greater rumination. If you are having concerns about anxiety, you should contact counseling services (see below) and if you would like more information on this topic you can refer to Chapter 14, pg 611-617 in your PS100 text.

We hope that this research will give us a better understanding of social anxiety and to what extent the role of personality traits, namely perfectionism, plays in socially anxious person's intensity and/or likelihood to engage in rumination.

Thank you for your participation in this study. Results will be e-mailed to you via the PREP system by April 1, 2011 and posted outside the psychology main office. If you have any questions about your participation in this study or about the study itself, please contact:

Jaclyn Brown

Department of Psychology
Wilfrid Laurier University
Office: N2059
Phone: 519-884-0710 ext. 2587
Email: brow2880@wlu.ca

Dr. Nancy Kocovski

Department of Psychology
Wilfrid Laurier University
Office: N2025
Phone: 519-884-0710 ext. 3519
Email: nkocovski@wlu.ca

If you feel your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair Research Ethics Board and Associate Professor (Social Work), Wilfrid Laurier University, at 519-884-1970 ext.5225, or by email at rbasso@wlu.ca Counseling services at WLU are confidential and free. If you are experiencing social anxiety, depression, or suicidal ideation, please refer to the following list of resources:

Counseling Services: Wilfrid Laurier

University
75 University Avenue West
Waterloo, Ontario, N2L 3C5
(519) 884 0710 x2338
<http://www.mylaurier.ca/counselling/home.htm>

Canadian Mental Health Association

67 King Street East
Kitchener, ON N2G 2K4
Ph: (519) 744-7645
<http://www.cmhawrb.on.ca>
<http://www.cmha.ca>

Appendix I**Recruitment Form: Phone**

Hello is _____ there?

Hello _____ ,

My name is Jaclyn Brown and I am calling you to request your participation in a study I am currently conducting as part of my Masters research.

You are eligible to take part in a study I am conducting based on your score on a measure in mass testing.

Participation in this study will take place on campus. In total this study will grant you 1.25 PREP credits and your name will be entered in a draw to win 1 of 5 Tim Horton's gift cards, valued at \$10 dollars. Would you be interested in participating?

The purpose of this study is to examine how behaviours following a social interaction might impact personality traits and attitudes regarding the experience of future social interactions.

This study will take about 45 minutes (no more than one hour) of your time. It will require you to come into the lab, and fill out some brief self-report measures, answer some demographic questions (e.g., age, gender, cultural background), as well as spending 3 minutes verbally introducing yourself to the tester.

Here are a few upcoming time slots...

Which one would you be interesting in taking?

Appendix J

Recruitment Form: Email

GUARANTEED 1.25 PREP CREDITS AND A CHANCE TO WIN TIM HORTAN'S GIFT CARDS

Hello _____ ,

This e-mail has been sent to you, as a request for your participation in a study I am currently conducting as part of my Masters research. You are eligible to take part in this study based on your score from a measure in mass testing

The purpose of this study is to examine how behaviours following a social interaction might impact personality traits and attitudes regarding the experience of future social interactions.

Participation in this study will take on campus and your participation in this research would grant you 1.25 PREP credits and your name will be entered for a chance to win 1 of 5 Tim Horton's gift cards valued at 10 dollars each!

This study will take about 45 minutes (no more than one hour) of your time. It will require you to come into the lab, and fill out some brief self-report measures, answer some demographic questions (e.g., age, gender, cultural background), as well as spending 3 minutes verbally introducing yourself to the tester.

Completion of this study will secure your name in a draw for 1 of 5 ten dollar Tim Horton gift cards. Winners will be contacted by either phone or email.

If you are interested in participating and having a chance to win a 10\$ Tim Horton gift-card, please log on to PREP and search for the study "Personality, Social Interaction and Cognitions: Part 1", or contact me (Jaclyn Brown) at this address:

brow2880@mylaurier.ca, and I will be happy to set up a time-slot for you to come in.

Thank-you so much for your time and attention,

Appendix K**PREP Sign-up Sheet**

Title: Social Interaction, Personality and Cognitions.

Researcher: Jaclyn Brown

Supervisor: Dr. Nancy Kocovski

Credit: 1.25 credits

Description of Study: The purpose of this study is to examine how behaviours following a social interaction might impact personality traits and attitudes regarding the experience of future social interactions. This study will on campus and will take about 45 minutes to complete. Based on scores from mass testing, a total of 120 participants will eligible to participate in this study. Participants will be asked to respond to various questionnaires including demographic information (e.g., race, gender, age, and cultural background), and participate in a brief, verbal self introduction task (3 minute presentation) to the researcher. Participating in this research will grant you 1.25 PREP credits as well as a chance to win 1 of 5 Tim Horton's gift cards valued at \$10 dollars.

Appendix L**Social Interaction Anxiety Scale (SIAS)**

Indicate the degree to which you feel the statement is characteristic or true of you".

- | <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> |
|-------------------|-----------------|-------------------|-------------|------------------|
| <i>Not at all</i> | <i>Slightly</i> | <i>Moderately</i> | <i>Very</i> | <i>Extremely</i> |
1. I get nervous if I have to speak with someone in authority (teacher, boss, etc.)
 2. I have difficulty making eye-contact with others
 3. I become tense if I have to talk about myself or my feelings
 4. I find difficulty mixing comfortably with the people I work with
 5. I find it easy to make friends my own age *reverse score
 6. I tense-up if I meet an acquaintance in the street
 7. When mixing socially I am uncomfortable
 8. I feel tense if I am alone with just one other person
 9. I am at ease meeting people at parties, etc. *reverse score
 10. I have difficulty talking with other people
 11. I find it easy to think of things to talk about. *reverse score
 12. I worry about expressing myself in case I appear awkward
 13. I find it difficult to disagree with another's point of view
 14. I have difficulty talking to attractive persons of the opposite sex
 15. I find myself worrying that I won't know what to say in social situations
 16. I am nervous mixing with people I don't know well
 17. I feel I'll say something embarrassing when talking
 18. When mixing in a group I find myself worrying I will be ignored
 19. I am tense mixing in a group
 20. I am unsure whether to greet someone I know only slightly

Appendix M**Subjective Units of Distress Scale (SUDS)**

0	25	50	75	100
No distress	Mild distress	Moderate distress	Significant distress	Highest possible distress

Please record your level of distress.	Distress 0-100

Appendix N

Multiple Perfectionism Test (MPT)

Please select options that best correspond to your experience from your speech task, with each of the statements below:

1	2	3	4	5	6
<i>Not at all</i>					<i>Very</i>
<i>-Important</i>					<i>-Important</i>
<i>-Concerned</i>					<i>-Concerned</i>
<i>-Satisfied</i>					<i>-Satisfied</i>

1. Describe in your own words how well you think you should normally perform on a similar task.
_____.
2. Right now, how satisfied are you with your speech performance?
3. Right now, how concerned are you that you did your best?
4. Right now, what do you think are the shortcomings in your speech performance?
_____.
5. Right now, how much are you thinking about these shortcomings?
6. Right now, how much do you think the researcher's impression of you is affected by these shortcomings?
7. Right now, how worried are you about any mistakes you made?
8. Right now, how systematic and organized do you think you were in approaching the speech task?

Appendix O

State Perfectionism: Socially Prescribed Perfectionism (State MPS: SPP)

Select options that best correspond to your agreement with each of the statements below based on how you are feeling RIGHT NOW:

- | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------------------------------------------------------------------------------------------|---|---|-----------------------------------|---|---|-----------------------|
| <i>Strongly disagree</i> | | | <i>Neither agree nor disagree</i> | | | <i>Strongly agree</i> |
| 1. Right now, I am finding it difficult to meet the researcher's expectations of me. | | | | | | |
| 2. Right now, I feel like the researcher can readily accept that I can make mistakes. | | | | | | |
| 3. Right now, the better I do, the better the researcher expects me to do. | | | | | | |
| 4. Right now, anything I do that is less than excellent will be seen as poor work by the researcher. | | | | | | |
| 5. Right now, I feel like the researcher expects me to succeed at everything I do. | | | | | | |
| 6. Right now, I feel like the researcher will still like me, even if I don't excel at everything. | | | | | | |
| 7. Right now, to be successful, I feel that I have to work even harder to please the researcher. | | | | | | |
| 8. Right now, I feel like the researcher thinks I am okay, even when I do not succeed. | | | | | | |
| 9. Right now, I feel that the researcher is too demanding of me. | | | | | | |
| 10. Right now, although the researcher may not show it, the researcher gets very upset if I slip up. | | | | | | |
| 11. Right now, I feel like the researcher expects me to be perfect. | | | | | | |
| 12. Right now, I feel that the researcher expects me to excel in all aspects of my life. | | | | | | |
| 13. Right now, I feel that the researcher expects nothing less than perfection from me. | | | | | | |
| 14. Right now, I feel like the researcher expects more from me than I am capable of giving. | | | | | | |
| 15. Right now, I feel like the researcher thinks I am still competent, even if I make a mistake. | | | | | | |

Appendix P

State Perfectionism: Concern Over Mistakes/Doubting Actions (FMPS: COM/DA)

Please select options that best correspond to your agreement with each of the statements below based on how you are feeling RIGHT NOW:

1	2	3	4	5
<i>Disagree</i>		<i>Neither agree nor disagree</i>		<i>Agree</i>

COM:

1. Right now, I feel like if I fail at tasks such as introducing myself, I am a failure as a person.
2. Right now, I feel like I should be upset if I make a mistake when meeting someone new.
3. Right now, I feel like if someone does a task better than I do, I have failed the entire task.
4. Right now, I feel like if I perform parts of a task poorly (like introducing myself to a new person), I am a complete failure.
5. Right now, I hate being less than best at things.
6. Right now, I feel like the researcher will think less of me if I make mistakes.
7. Right now, I feel like if I do not perform as well as others do on a similar task, I am an inferior being.
8. Right now, I feel like if I do not do well, the researcher will not respect me.
9. Right now, I feel like the fewer mistakes I make, the more the researcher will like me.

DA:

1. Right now, I feel that even if I do things carefully, they are not quite right.
2. Right now, I am having doubts about the simple everyday things I do.
3. Right now, I am feeling behind because I often repeat things over and over.
 4. Right now, I feel like it will take me a long time to do something "right".

Appendix Q**Rumination Questionnaire (RQ)**

For the 10 minutes, try your best to focus your attention on each of the ideas on the following pages. Read each item slowly and silently to yourself. As you read the items, use your imagination and concentration to focus your mind on each of the ideas. Spend a few moments visualizing and concentrating on each item, and then write down your thoughts in the space provided below.

1. Think about: the concerns you had prior to giving your speech. Write about these thoughts.
2. Think about: the concerns you had during your speech. Write about these thoughts.
3. Think about: the concerns you had after giving your speech. Write about these thoughts.
4. Think about: how you appeared while giving the speech. Write about these thoughts.
5. Think about: the physical sensations you experienced while giving your speech. Write about these thoughts.
6. Think about: all the mistakes you made during your speech. Write about these thoughts.
7. Think about: how you did on your speech compared to how you think others would have done on this same task. Write about these thoughts.
8. Think about: how you could have improved your articulation while giving the speech. Write about these thoughts.
9. Think about: how you could have improved the content of your argument during your speech. Write about these thoughts.

Appendix R

Distraction Induction Task (DIT)

For the next 10 minutes, try your best to focus your attention on each of the ideas on the following pages. Read each item slowly and silently to yourself. As you read the items, use your imagination and concentration to focus your mind on each of the ideas. Spend a few moments visualizing and concentrating on each item.

1. Think about: and imagine a boat slowly crossing the Atlantic
2. Think about: the layout of a typical classroom
3. Think about: the shape of a large black umbrella
4. Think about: the movement of an electric fan on a warm day
5. Think about: raindrops sliding down a windowpane
6. Think about: a double-decker bus driving down a street
7. Think about: and picture a full moon on a clear night
8. Think about: clouds forming in the sky
9. Think about: the layout of the local shopping center
10. Think about: and imagine a plane flying overhead
11. Think about: fire darting around a log in a fire-place
12. Think about: and concentrate on the expression on the face of the Mona Lisa
13. Think about: a parking lot at a drive-in
14. Think about: two birds sitting on a tree branch
15. Think about: the shadow of a stop sign
16. Think about: the layout of the local post office
17. Think about: the structure of a high-rise office building
18. Think about: and picture the Eiffel Tower
19. Think about: and imagine a truckload of watermelons
20. Think about: the pattern on an Oriental rug
21. Think about: the "man in the moon"
22. Think about: the shape of the continent of Africa
23. Think about: a band playing outside
24. Think about: a group of polar bears fishing in a stream
25. Think about: the shape of the torch on the Statue of Liberty
26. Think about: the shape of the state of California
27. Think about: the way the Grand Canyon looks at sunset
28. Think about: the structure of the Golden Gate Bridge
29. Think about: a train stopped at a station
30. Think about: a lone cactus in the desert
31. Think about: the shape of the country of Italy
32. Think about: a row of shampoo bottles on display
33. Think about: a gas station on the side of a highway
34. Think about: the fuzz on the shell of a coconut
35. Think about: the Presidents' faces on Mount Rushmore
36. Think about: a band playing "The Star Spangled Banner"
37. Think about: the shape of a cello
38. Think about: the birthmark on Gorbachev's head
39. Think about: the shape of the United States
40. Think about: the baggage claim area at the airport
41. Think about: the size of the Statue of Liberty
42. Think about: the shape of a baseball glove
43. Think about: a freshly painted door
44. Think about: the shiny surface of a trumpet

Appendix S**Manipulation Check**

	0	1	2	3	4
	Not at All	Rarely	Sometimes	Often	Very Much
To what extent were you thinking about the speech you gave?					
To what extent were you dwelling on your speech or aspects of your speech?					
To what extent were you thinking of things completely unrelated to the speech that you delivered? *Reverse score					

Appendix T

Post-Event Processing Questionnaire (PEPQ)

Please respond to the following items **focusing on the conversation task that you took part in during the first part of this study.**

Place a mark along the scale for each item.

For example: 0 |—————/—————| 100

1. After the conversation task was over, did you think about it a lot?
2. Did your memories and thoughts about the conversation task keep coming into your head even if you did not wish to think about it again?
3. Have the thoughts about the conversation task interfered with your concentration?
4. Did you find it difficult to forget about the conversation task?
5. Did you try to resist thinking about the conversation task?
6. If you repeatedly thought about the conversation task, did your feelings about the conversation task worsen?
7. Have you ever wondered about whether you could have avoided or prevented your behaviour/feelings during the conversation task?
8. Have you ever wished that you could turn the clock back and do it again but better?
9. As a result of the conversation task, are you now avoiding similar situations?
10. Did this conversation task reinforce your pre-existing avoidance of similar situations?
11. Did you experience a sense of shame while remembering your behaviour during the conversation task?
12. Did you think about anxious feelings that you had experienced during the conversation task?
13. When remembering the situation, did other instances of past failure that you had experienced in the same way come into your mind?
14. Have you criticized yourself for your behaviour in the situation?
15. Have you thought about the conversation task more than you wanted to?
16. Have you thought about any bodily sensations you may have experienced in the situation?
17. In your memories about the conversation task, did you see yourself (your behaviour, your attributes) in a positive way? *reverse scored
18. In your memories about the conversation task, did you see yourself (your behaviour, your attributes) in a negative way?

Appendix U

Thoughts Questionnaire (TQ)

Please rate each statement as to how often you thought about that aspect in the time since you left the laboratory. I thought about this in the past week;

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Never</i>	<i>Not Often</i>	<i>Sometimes</i>	<i>Often</i>	<i>Very Often</i>

1. My speech was good *positive item - reverse score
2. I could have done much better
3. How anxious I felt
4. The investigator liked me *reverse score
5. If my blushing/sweating/dry mouth/blinking was obvious
6. How well I handled it *reverse score
7. How bad my speech was
8. I made a fool of myself
9. How much I enjoy these situations *reverse score
10. How I always do badly in this type of situation
11. I must have looked stupid
12. How smoothly it all went *reverse score
13. How self-conscious I felt
14. What a failure I was
15. How many mistakes I made
16. How confident I felt *reverse score
17. I came across as self-assured *reverse score
18. How awkward I felt
19. That I was at my best *reverse score
20. How fast my heart was pounding
21. I didn't make a good impression
22. *Other aspects of the situation* -stand alone item (neither positive nor negative)
23. *The situation overall* -stand alone item (neither positive nor negative)

Appendix V

Wilfrid Laurier University Informed Consent Study 2

Personality Social Interaction and Cognitions

Jaclyn Brown and Dr. Nancy Kocovski, Department of Psychology, Wilfrid Laurier University

The purpose of this study is to investigate social anxiety, which is the type of anxiety experienced when one fears being judged by others. The principal researcher is Jaclyn Brown, a graduate student in the Department of Psychology, and her research supervisor, Dr. Nancy Kocovski, Associate Professor in the Department of Psychology.

INFORMATION

Your participation in this study is based on your scores from a measure in mass testing, and will involve the completion of computer based questionnaires, giving a brief introductory speech about yourself to the researcher, as well as completing a few brief paper and pencil questionnaires. The questionnaires will be used to assess social anxiety and aspects of your personality, along with demographic information (e.g., age, gender, cultural background). It is expected that 120 students recruited through PREP will be participating in this on campus and online research study. This study will take approximately 45 minutes to complete (no more than one hour). The study cannot be fully explained at this time, but the full details of the study will be explained following the conclusion of your participation in this research. Results will be made available to participants through PREP upon the study's completion.

RISKS

There are minor physical risks associated with the present study, such as feeling slight fatigue or mild discomfort of your eyes from working at a computer monitor. Foreseeable psychological risks may include feelings of anxiety or loss of privacy that may arise from the surveys or your introduction speech to the researcher; however these feelings are normal and should only be temporary. You are free at any time to omit answers and/or withdraw from this study. If you are experiencing any concerns about social anxiety, please contact Dr. Nancy Kocovski (nkocovski@wlu.ca) and/or Counseling Services (519) 884-0710 extension 2338, 2nd floor, Student Services Building, (<http://www.mylaurier.ca/counselling>; 22couns@wlu.ca). Please note that Counseling Services on campus are free and confidential.

BENEFITS

In addition to participating in psychological research that will help us better understand social anxiety, you will also receive course credit and your name will be entered into a draw to win 1 of 5 Tim Horton's gift cards valued at \$10 dollars each.

CONFIDENTIALITY

All information that is obtained from you during the course of this research is completely confidential and will not be shared with anyone other than the researcher (Jaclyn Brown) and the research supervisor (Dr. Nancy Kocovski), however because this project employs some e-based data collection techniques, the confidentiality and privacy of data cannot be guaranteed during web based transmission. De-identified electronic data will be retained indefinitely. Student IDs will only be attached to consent forms for participation credit to be assigned. These hardcopy data (questionnaires and consent forms) will be housed in a locked cabinet within Dr. Nancy Kocovski's locked lab at Wilfrid Laurier University, and will be destroyed no later than April 30th, 2018. Once participants agree to the study, they will be assigned a new anonymous ID that will be associated with subsequent data collected. All electronic information (e.g., answers to questions) will be anonymous and only identified by the same research identification number in a password-protected computer file. Any electronic data will be stored on a password protected computer in Dr. Nancy Kocovski's locked lab. Your name will not appear in this file. There will be no identifying information on the data.

If you complete the study, electronic data acquired in this research will be retained indefinitely, but any raw data collected, will be destroyed after 7 years. If you choose to withdraw from the study at any time your electronic data will be deleted and any raw data will be destroyed. Although the results of this study may be published, they will be reported in a way that makes it impossible to identify individual participants. Only aggregate data will be presented. As such, your specific scores will not be made available to you, though a general report of the study's findings will be made available to you.

COMPENSATION

For participating in this study your name will be entered into a draw for a chance to win 1 of 5 Tim Horton's gift cards valued at ten dollars. In addition you will receive 1.25 credits. If you choose to withdraw from this study you will only receive credit. Withdrawing at any point will not result in penalty and your name will still be considered for the Tim Horton's draw. Ways to earn the same amount of credit are to complete a journal article review or other research studies(guidelines are available in the general psychology office, N2006).

CONTACT

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study) you may contact the researcher, Jaclyn Brown (brow2880@mylaurier.ca) or at (519) 884-0710 ex. 2587, N2059 or the research supervisor, Dr. Nancy Kocovski (nkocovski@wlu.ca) at (519) 884-0710 ex. 3519, office N2025. This project has been reviewed and approved by the University Research Ethics Board at Wilfrid Laurier University. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair Research Ethics Board and Associate Professor (Social Work), Wilfrid Laurier University, at 519-884-1970 ext.5225, or by email at rbasso@wlu.ca

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be deleted. You may withdraw from the study at any time without penalty. You have the right to omit any question(s)/procedure(s) you choose.

FEEDBACK AND PUBLICATION

The results of this research may be presented at conferences or submitted for publication. The results may also be written up for partial fulfillment of Jaclyn Brown's Master of Arts degree.

You will be sent information about the final results via email by April 1, 2011 and the results will be posted outside the psychology department main office.

CONSENT

I have read and understand the contents of this form. I have received a copy of this form. I agree to participate in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

Appendix W

Wilfrid Laurier University: Partial Debriefing Form

Social Interaction, Personality and Cognitions
Jaclyn Brown and Dr. Nancy Kocovski, Department of Psychology

Thank you for completing part 1 of this study. Part 2 of this study is to be completed in two days from today.

You will be e-mailed with a link to complete Part 2 of the study:

Your ID number is: _____
You will complete the study on: _____

You will be contacted through PREP (via email) to remind you to complete Part 2 of the study. After completing Part 2 of the study, you will be fully debriefed and all aspects of this study will be explained to you.

Thank you for your participation in this study. Results will be e-mailed to you via the PREP system by April 1, 2011 and posted outside the psychology main office.

If you have any comments or concerns regarding Part 1 of the study, please contact:

Jaclyn Brown
Department of Psychology
Wilfrid Laurier University

Dr. Nancy Kocovski
Department of Psychology
Wilfrid Laurier University

or

Office: N2059
Phone: 519-884-0710 ext. 2587
Email: brow2880@wlu.ca

Office: N2025
Phone: 519-884-0710 ext. 3519
Email: nkocovski@wlu.ca

If you are having concerns about anxiety, or in general, you should contact counseling services (see below) and if you would like more information on this topic you can refer to Chapter 14, pg 611-617 in your PS100 text.

If you feel your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair Research Ethics Board and Associate Professor (Social Work), Wilfrid Laurier University, at 519-884-1970 ext.5225, or by email at rbasso@wlu.ca. Counseling services at WLU are confidential and free of charge. If you are experiencing social anxiety, depression, or suicidal ideation, please refer to the following list of resources:

Counseling Services: Wilfrid Laurier University
75 University Avenue West
Waterloo, Ontario, N2L 3C5
(519) 884 0710 x2338
<http://www.mylaurier.ca/counselling/home.htm>

Canadian Mental Health Association
67 King Street East
Kitchener, ON N2G 2K4
Ph: (519) 744-7645
<http://www.cmhawrb.on.ca>
<http://www.cmha.ca>

Appendix X

Wilfrid Laurier University Complete Debriefing Form

Social Interaction, Personality and Cognitions.
Jaclyn Brown and Dr. Nancy Kocovski, Department of Psychology

It is **very important** that you read this information. Please take some time to go over it carefully. The full details of the purpose of this study was not explained to you in the consent form, but is explained below.

Although the present study's full intentions were not revealed in the consent form as to control for participants responding in a socially desirable manner; the present study's intentions were to examine the relationships among social anxiety, rumination and perfectionism. Social anxiety is characterized by unwarranted fears of negative evaluation or judgments from others while interacting in social situations. Rumination refers to dwelling on situations and perfectionism as examined in this study can be described as a personality trait or tendency to doubt one's own actions or capabilities, to maintain concerns over making mistakes, or to believe that others maintain very high expectations of you.

Demographic information for this study was collected to maintain background information on the sample of participants as a whole. Many journals like to see samples described in this way (age, gender, cultural background, etc), and thus demographic information will be reported on in this manner.

You were invited to participate in this study based on a measure of social anxiety that you completed in mass testing, September 2010. Individuals who reported experiencing anxiety in social situations (high scores on the SIAS- Social interaction Anxiety Scale), in the fall of 2010, were eligible to participate in this study.

Participants were randomly allocated to one of three manipulation conditions; rumination, distraction, and control. The specific of this study was to determine if encouraging participants to ruminate, distract, or provide no suggestions, would impact subsequent reporting of anxiety and perfectionism, following an anxiety provoking event. In the rumination condition participants were encouraged to think about concerns and thoughts they had prior to, during, and after their speech. They were encouraged to focus on their performance, about their mistakes, how they did on their speech compared to others, and how they could have improved. In the distraction condition, participants were encouraged to think about things which would take their attention away from the speech they just gave. For example, participants were told to think of things like; raindrops sliding down a glass windowpane, or the colours in a rainbow. In the control condition, participants were given no instructions other than being told they would have to wait a few minutes before finishing the last questionnaire packet.

It was expected that those in the rumination condition, and possibly those in the control condition would maintain high scores on reported anxiety and perfectionism following this manipulation compared to those in the distraction condition.

If you are having concerns about anxiety, you may contact counseling services (see below) and if you would like more information on this topic you can refer to Chapter 14, pg 611-617 in your PS100 text.

We hope that this research will give us a better understanding of social anxiety and to what extent rumination plays a role in socially anxious person's experience of anxiety and perfectionist beliefs.

Thank you for your participation in this study. Results will be e-mailed to you via the PREP system by April 1, 2011 and posted outside the psychology main office. If you have any questions about your participation in this study or about the study itself, please contact: