

Worry and its Relationship to Shyness

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Worry and shyness were explored along with other aspects of social anxiety, such as fear of negative evaluation, and social avoidance and distress. All four factors were related, and all related to negative affect as well. With negative affect removed to control for neuroticism, worry, shyness, and fear of negative evaluation were still significantly correlated, suggesting that cognitive factors connect them. Worry may play a heretofore unappreciated role in shyness and vice versa.

Social psychology and personality psychology have explored extensively the topic of shyness, and key figures from these areas, such as Zimbardo (1977) and Buss (1980), have made major contributions to our understanding of this phenomenon. Shyness has been examined from cognitive, affective, and behavioral perspectives (Henderson, Zimbardo, & Carducci, 2001). In the cognitive realm shyness has been found to be associated with self-consciousness, cognitive interference, and underestimation of social competence (for a good recent review, see Crozier, 2001). By and large, however, worry has not been examined in the context of shyness. Zimbardo's 1977 book, *Shyness*, does not index worry, and Cheek, in an important summary chapter acknowledged it only in passing (p. 49, Cheek & Melchior, 1990). Shyness studies which have considered worry have often given it cursory treatment or focused on some particular but limited aspect of worry, such as worry about being negatively evaluated by others (Sarason & Sarason, 1986) or performance worries (Arnold and Cheek, 1986).

In 1987 the American Psychiatric Association redefined anxiety neurosis as generalized anxiety disorder (GAD) with worry as its primary symptom (*Diagnostic and Statistical Manual*, 1987). This encouraged psychology to take worry seriously as a topic unto itself, and many studies were performed by clinical psychologists as a consequence. However, the worry literature has largely ignored the shyness literature, despite certain commonalities. For example, both worry and shyness share a core of anxious, negative, and self-focused cognitions (Cheek & Melchior, 1990; Borkovec, 1994).

Early worry research simply classified individuals as worriers if they so considered themselves, or by amount of time spent worrying

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(Pruzinsky & Borkovec, 1990). The *Penn State Worry Questionnaire* (Meyer, Miller, Metzger, & Borkovec, 1990) was developed to correct this deficit. It was validated primarily on normal student populations but has been extensively used in clinical studies with anxiety-disordered individuals (Brown, Antony, & Barlow, 1992; Molina & Borkovec, 1994). Worry's relationship with social anxiety has never been fully explored, though both states are common, and clinicians have long noted social anxiety symptoms in individuals with GAD. Likewise, individuals with social phobia frequently report excessive worry, and dual diagnosis is common. Worry has been found to correlate with state and trait anxiety, test anxiety, low self-esteem, perfectionism, self-handicapping, and self-consciousness. Unlike some types of anxiety, it is very thought-focused, with relatively little image content or physiological arousal (Borkovec, 1994; Borkovec & Inz, 1990). Worry does not correlate with social desirability, locus of control, experience seeking, disinhibition and need for cognition (Meyer et al., 1990). It can be empirically distinguished from obsessionality (Coles, Mennin, & Heimberg, 2001; Molina & Borkovec, 1994), locus of control (Meyer et al., 1990), and emotionality (Deffenbacher, 1980).

In essence we have two literatures with relatively little cross-over. Shyness research had the head start, but seems to have been produced and read primarily by social psychologists. The change in DSM criteria led clinical psychologists, especially behaviorists, to pursue the topic of worry, but with little or no reference to shyness research.

The absence of exploration of the worry/shyness relationship is a significant gap in the literature, as both traits are very common in both normal and clinical populations. While shyness can be defined broadly or narrowly, one manifest component is anxious thinking. The current study was formulated to explore the relationship between worry and shyness. It was predicted that worry would correlate positively with shyness and other aspects of social anxiety, including fear of negative evaluation, social avoidance, and negative affect. These factors are known to correlate with shyness but have not been explored with worry. It was also predicted that worry would correlate inversely with non-anxious traits such as sociability and positive affect. All of the negative emotional traits, however, have a common component of neuroticism and would likely correlate for that reason alone. With neuroticism controlled, however, it was predicted that worry and shyness would still correlate because they contain a common factor of anxious cognition.

METHOD

In this study 122 college students completed the *Penn State Worry Questionnaire* (PSWQ) as well as some commonly used instruments measuring fear of negative evaluation, social avoidance and distress, shyness and sociability, and negative and positive affect, respectively. This was a convenience sample and participants were recruited from psychology classes, receiving course credit for their participation. The questionnaires were administered in regular class sessions with 100% participation. The average respondent's age was 22 and the range was 44 (16 to 60). Participants included 72 females and 50 males, 71% of whom were European American, while 20% were ethnic minorities. Specifically, there were 87 European Americans, 12 African Americans, 6 Latinos, 5 Asian Americans, 1 Native American, and 11 who did not indicate ethnicity.

The PSWQ was developed by Thomas Meyer and Thomas Borkovec, and contains 16 items, all of which ask about worry, either directly or in reverse-scored format. Its purpose is to examine the strength and intensity of worry, rather than specific worry domains, and has been widely used (Meyer et al., 1990). A sample item is: "I am always worrying about something."

The *Fear of Negative Evaluation* (FNE) and *Social Avoidance and Distress* (SAD) scales were developed by Watson and Friend in 1969 to measure two aspects of social anxiety. The FNE examines concern over anticipated critical evaluations and nervousness regarding disapproval. A sample item is "I am frequently afraid that other people notice my shortcomings." The Brief FNE was developed by Mark Leary and was used in this study as it correlates .96 with the original FNE but is only 12 items (Leary, 1983). The SAD has been used in hundreds of studies (Leary, 1991) and measures behavioral avoidance and social distress. It contains 28 items, one of which is "I would avoid walking up and joining a large group of people."

The *Revised Cheek & Buss Shyness Scale* contains both shyness and sociability subscales, is the most widely used shyness questionnaire, and has spawned a voluminous literature (Cheek & Melchior, 1990; Leary, 1991). Sociability often relates to other variables in a manner opposite to shyness. A sample shyness item is "I feel tense when I'm with people I don't know well." and a sample sociability item is "I prefer working with others rather than alone."

Because it was expected that all the anxiety-related factors would correlate, a neuroticism measure was included to examine whether the anticipated relationships would be due simply to this common component. The *Positive Affect/Negative Affect Schedule* was utilized as it provides reliable and brief measurements of neuroticism and opposite

characteristics (Watson, Clark, & Tellegen, 1988). This questionnaire presents individuals with 10 positive affect (e.g., "proud") and 10 negative affect (e.g., "guilty") terms and respondents rate on a 5-point scale to what extent they generally feel that way. All scales are 5-option Likert-type measures.

RESULTS

Means and standard deviation for the study variables are presented in Table 1, and are similar to those reported in other investigations (Cheek & Melchior, 1990; Gillis, Haaga, & Ford, 1995; Leary, 1983; Meyer et al., 1990; Ruscio, Borkovec, & Ruscio, 2001; Watson, Clark, & Tellegen, 1988). ANOVAs on study variables found no significant relationships for ethnicity and only one for sex (women reported worrying more). Some investigations with the PSWQ have found women report more worry but many have found no gender difference (Lovibond & Rapee, 1993; Stanley, Novy, Bourland, Beck, & Averill, 2001).

TABLE 1 Descriptive Statistics for Study Variables

<u>Variable</u>	<u>Item Mean</u>	<u>Standard Deviation</u>
FNE	2.95	.75
SAD	2.57	.72
PSWQ	3.10	.90
Shyness	2.87	.46
Sociability	3.52	.91
Positive Affect	3.45	.69
Negative Affect	2.35	.85

Note: Means were computed on a per-item basis (scale 1 – 5) rather than a summary-score basis because SPSS corrects the denominator in the case of missing data. In some other studies Worry Questionnaire means have been presented in summary format, and the present sample has PSWQ summary score mean of 49.62 and a standard deviation of 14.4. This is very similar to the 48.8 and 13.8, respectively, reported in its validation article (Meyer et al., 1990).

As predicted, the PSWQ correlated with all the measures of social anxiety, and the strongest relationship was with Fear of Negative Evaluation, which is also the closest conceptually. Worry correlated as well with Shyness, Social Avoidance and Distress, Positive Affect, Negative Affect, and its correlation with sociability approached conventional levels of significance ($r = -.20, p < .06$; see Table 2). Most of these relationships have never been demonstrated before (T. Borkovec,

personal communication, July 10, 2004)¹. Because of the potential confounding factor of neuroticism partial correlations were computed with variance due to negative affect removed, and the relationship between PSWQ and FNE remained significant ($pr = .45$), as did that with Shyness ($pr = .22$), while other worry relationships were non-significant. A few FNE items concern worry, but the relationship between FNE and PSWQ is not artifactual. When the items concerning worry are removed the FNE-PSWQ correlation was hardly diminished, with the zero-order correlation at .60 (vs. .67) and the partial correlation at .39 (vs. .45).

TABLE 2 Pearson Correlation Matrix for Study Variables

	1	2	3	4	5	6	7
Penn State Worry Questionnaire	-						
Fear of Negative Evaluation	.67**	-					
Social Avoidance & Distress	.42**	.44**	-				
Shyness	.47**	.56**	.54**	-			
Sociability	-.20	-.21	-.72**	-.15	-		
Negative Affect	.65**	.61**	.62**	.51**	-.31**	-	
Positive Affect	-.22*	-.10	-.45**	-.21	.24*	-.35**	-

Note. * $p < .05$ (two-tailed). ** $p < .01$ (two-tailed).

An inspection of Table 3 shows that several other relationships persisted despite the partialing out of neuroticism, such as the relationship between fear of negative evaluation and shyness. Likewise social avoidance and distress retained its direct correlation with shyness and its inverse correlations with sociability and positive affect. While published studies have reported zero-order correlations between some of these questionnaires (Leary, 1991; Okazaki, 1997), this may be the first study that factors out negative affect.

The relationship between shyness and worry is partly but not wholly mediated by fear of negative evaluation. The partial correlation between shyness and worry with the variance due to FNE removed is .22 ($pr < .05$).

¹ Lovibond & Rapee (1993) found that the PSWQ and FNE correlate at the .44 level.

DISCUSSION

As predicted, worry and shyness were significantly related, and worry also correlated with two aspects of shyness: fear of negative evaluation as well as social avoidance and distress. Both concepts also correlated directly with negative affect and inversely with positive affect. When neuroticism was controlled using partial correlations, significant relationships remained between worry, shyness, and fear of negative evaluation. This establishes the relationship between two important aspects of anxiety (worry and shyness), confirming results from Schlette,

TABLE 3 Partial Correlation Matrix Controlling for Negative Affect

	1	2	3	4	5	6
1. Penn State Worry Questionnaire	—					
2. Fear of Negative Evaluation	.45**	—				
3. Social Avoidance & Distress	.03	.09	—			
4. Shyness	.22*	.36**	.32*	—		
5. Sociability	-.01	-.03	-.71**	.01	—	
6. Positive Affect	.01	.15	-.31*	-.03	.15	—

Note. * $pr < .05$ (two-tailed). ** $pr < .01$ (two-tailed).

Brandstrom, Eisemann, Sigvardsson, Nylander, Adolfsson, & Perris (1998). It also narrows in on the aspects of shyness that provide that connection. That social avoidance and distress loses its relationship with worry when neuroticism is controlled makes sense, since this factor represents the behavioral and emotional aspects of shyness. In contrast, fear of negative evaluation is cognitive in nature, and is central to both shyness and social phobia (Turner, Beidel, & Townsley, 1990). These results suggest that there is an important but unexplored relationship between worry and social evaluation fears, and that a major component of worry is concern for the opinions and impressions of others (Wells, 1995). Aside from any inherent desire for others' approval, this is reasonable in that others frequently provide rewards (e.g., attention, compliments) or punishments (e.g., criticism, hostility). Further evidence for this connection comes from the clinical arena, in which many individuals with generalized anxiety disorder also experience social phobia (Molina & Borkovec, 1994; Turner, Beidel, Borden, Stanley, & Jacob, 1991).

Shy people have been found to experience self-deprecating thoughts, acute self-consciousness, and social evaluation fears (Cheek & Melchior,

1990). These cognitive processes deplete information processing resources and turn attention inward rather than outward. This is similar to the metacognitive style of worriers, who are focused on internal cognitive processes to the detriment of efficient problem-solving (Borkovec, 1994; Schwarger, 1996). Both shyness and worry are experienced as unpleasant and ego-dystonic. In both states fear of making mistakes may lead to hesitant behavior, which may have an impact on interaction quality and relationship satisfaction (Borkovec, 1994; Larsen & Buss, 2002). Shy individuals lack social skills (Jones & Carpenter, 1986; Zimbardo, 1977) or may simply impair their social behavior through anxious preoccupation, self-doubts, and expectations of negative evaluation (Henderson & Zimbardo, 1998; Schwarger, 1996).

Another implication of the current research is that worry may be a cognitive strategy engaged in by shy individuals. Worriers have been found to believe that worry helps prevent negative future events and is useful in solving current problems (Laugesen, Dugas, & Bukowski, 2003; Wells, 1997). However, worry can become a problem of its own. Specifically, worry may help create the very events that shy people are trying to avoid. By shifting attention away from social interactions, worry may impair social performance. Shy individuals express doubts about their social competence and there is evidence that their social behavior is indeed impaired (Cheek & Melchior, 1990; Larsen & Buss, 2002). Individuals who are worrying about others' opinions and impressions may inadvertently miss important environmental cues, especially if they are somewhat subtle, such as tone of voice. A preoccupation with metacognition has been noted in both shy people (Cheek & Melchior, 1990) and worriers (Wells, 1994).

One question to be explored has to do with worries and situations. Cheek and Melchior (1990) propose that, for shy people, entering a social situation activates monitoring of cognitive processes and strategies, which causes tension and impairs social discourse. Do social situations serve as worry triggers for worriers? This is unknown as yet, though social concerns are commonly reported by worriers (Mathews, 1990) and self-consciousness occurs in both worriers (Pruzinsky & Borkovec, 1990) and shy individuals (Crozier, 2001).

It would appear likely that both worry and shyness are related to introversion and neuroticism, given their connection to inward focusing anxiety, and there is empirical support for this in the case of shyness (Crozier, 2001). However, there may be exceptions. Zimbardo has described some shy extroverts who behave in an out-going, sociable manner but who nonetheless are fearful of others' opinions and evaluations (Henderson & Zimbardo, 1998; Zimbardo, 1977). Worry

might thus be expected to a problem for both introverted and extroverted shy people.

One factor on which worry and shyness may vary is embarrassment. Shy individuals report embarrassment as a commonly experienced problem (Crozier, 2001; Zimbardo, 1977), while that is not an issue that seems to have been explored in the worry literature. Worriers commonly report fear of making a mistake, and their worry can interfere with the intake of important environmental information (Borkovec, 1994), so embarrassment may occasionally occur, but it does not seem to be as central as for shy individuals. Worry is also future-focused, with twice as many worries involving the future than the past (Borkovec, 1994). Some shy individuals only have their shyness triggered by particular situations (e.g., meeting new people), but many shy people show the anticipatory fear so typical of worriers, ruminating on future difficulties and strategizing about how to avoid anxiety-producing situations (Borkovec, Robinson, Pruzinsky, & DePree, 1983; Miller, 1996; Zimbardo, 1977).

While the current study cannot answer questions about origins of shyness and worry, there is interesting but separate theoretical work on the genesis of shyness and worry. Vivona (2000) and Muris, Meesters, Merckelbach, and Hulsbeck (2000) report that attachment and worry are related, with parental rejection and anxious rearing associated with increased worry in children and adolescents. Do parental behaviors stimulate patterns of worry which lead to shyness? Another possibility is that shyness is a bridge to worry. Buss suggests that early-developing shyness involves fear and somatic traits and that self-conscious shyness appears later as cognitive abilities increase, peaking during adolescence (Buss, 1980; Buss, 1986). A longitudinal study by Jerome Kagan and his colleagues has demonstrated continuity between measurements of social anxiety at age 2 and in adolescence (Schwartz, Snidman, & Kagan, 1999). It is possible that fearful affect emerges first, perhaps in association with temperament, and that worry emerges as a consequence. While worry research has included elementary age children (Chorpita, Tracey, Brown, Collica, & Barlow, 1997; Vasey, Crnic, & Carter, 1994), no one as yet has evaluated preschool individuals; such a study might be theoretically rich and empirically valuable.

In conclusion, the current study shows that shyness and worry are related, and that worry is not merely fear of negative evaluation, which has been extensively examined in shyness studies. Neither factor is simply neuroticism, as both continue to relate to shyness once variance due to negative affect is removed. The largely separate literatures of worry and shyness could benefit from cross-pollination, especially as both lines of research have focused on common metacognitive features. Future studies should explore whether one factor plays a role in the

development in the other and features that may be shared (e.g. anticipatory fears) or separate (e.g., embarrassment).

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