

Research Article

SHAME, PERSONALITY, AND SOCIAL ANXIETY SYMPTOMS IN CHINESE AND AMERICAN NONCLINICAL SAMPLES: A CROSS-CULTURAL STUDY

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Shame has been observed to play an important role in social anxiety in China [Xu, 1982]. Shame and personality factors, such as neuroticism and introversion-extraversion, are also related to social anxiety symptoms in Chinese college students [Li et al., 2003]. The aim of this study was to explore cross-cultural differences of the effects of shame and personality on social anxiety using the Experience Scale of Shame, the Eysenck Personality Questionnaire-Revised Short Scale and Social Anxiety Inventory. Data were collected from both a Chinese sample (n = 211, 66 males and 145 females, average ages 20.12 ± 1.56 years) and an American sample (n = 211, 66 males and 145 females, average ages 20.22 ± 1.90 years) of college students. The structural equation modeling (SEM) was performed separately for the Chinese and American samples. The SEM results reveal a shame-mediating model, which is adaptive and only in the Chinese sample. This suggests that shame is a mediator between the Chinese personality and social anxiety. The shame factor did not play the same role in the American sample. This empirical study supports the hypothesis that shame has a more important effect on social anxiety in the Chinese culture compared to its effect on Americans. Depression and Anxiety 25:449–460, 2008. © 2008 Wiley-Liss, Inc.

Key words: *shame; social anxiety; personality; Chinese; American*

INTRODUCTION

Shame is a type of negative emotion accompanied by negative introspection and self-evaluation, which shows the feature of “self-orientation” on phenomenological assessment [Qian et al., 2001]. Because of the intense self-denial and dependence on external appraisal, shame-proneness tends to have a stronger sense of worthlessness and powerlessness, and employs more strategies of concealing deficiencies and escaping in difficult situations [Qian et al., 2001; Tangney, 1992, 1995].

Although the measurements and subjects are quite different, several clinical research [Kaufman, 1989; Xu, 1982; Zhong, 1993] and empirical studies [Tangney et al., 1992; Tripp and Petrie, 2001; Zhu et al., 1999] have consistently found a connection between shame and psychopathology. Some studies have revealed that shame plays a central role in a variety of mental disorders, such as depression [Thomas, 2001], anxiety [Xu, 1982; Zhong, 1993], eating disorders [Frank,

1991; Kaufman, 1989; Tripp and Petrie, 2001] and drug addiction [Connor et al., 1994]. In addition, Zhong et al. [2002, 2003] confirmed a theoretical

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model that shame has a mediating effect between personality and mental health, as measured by the Symptom Check List-90 with Chinese college student samples.

SHAME AND SOCIAL ANXIETY

Because social anxiety disorder was considered as one of the anxiety disorders in the DSM system during the 1980s [American Psychiatric Association, 1980], many researchers have found that the patients with social anxiety readily feel anxiety, fear and inferiority, and tend to avoid social situations to conceal their deficiencies [Hofmann and Barlow, 2002]. Researchers have found that shame and social anxiety shared some similarities. For example, people with both or either shame-proneness or social anxiety often have withdrawn and avoided behaviors in social contexts and dislike eye contact with others; are more susceptible to negative feelings such as anxiety, fear and depression; and they tend to perceive things more negatively, threatening information about themselves in their cognitive processing [Qian et al., 2001; Tangney, 1995; Tangney et al., 1992]. Despite the findings of these similarities, there has been a paucity of research conducted on this topic.

Hirshfeld-Becker et al. [1999] revealed that more than half (56%) of the participants in their study experienced shameful or discomforting events that related to the development of social anxiety. This relationship was especially obvious in participants who felt anxiety in only one or several specific situations (e.g., giving a lecture, speaking in a meeting, eating or writing in public, or using public toilet facilities). They also found that repeated and accumulated experiences with low traumatic events (such as parents using shame to train children, or being laughed at by his/her peers) could also cause individuals to feel anxious in social interactions or situations being judged [Hirshfeld-Becker et al., 1999]. In a study on the validation of Body Image Guilt Shame Scale, body-image shame was found to be positively correlated with social anxiety [Thompson et al., 2003].

Some Chinese psychiatrists considered, based upon experiences from clinical practice, that shame is an important factor to patients with social anxiety [Xu, 1982]. This may be related specifically to Chinese culture, which emphasizes "having a sense of shame." In Chinese culture, if a person is perceived as having no sense of shame that person will be perceived as having no morals [Li et al., 2004]. Through the clinical practice on "people phobia," Zhong [1993] also found that the shame of having interest in sexual experiences was the main cause of social anxiety in adolescence. Some Chinese researchers conducted a regression analysis on social anxiety proneness among 200 college students, and the results revealed that social anxiety symptoms of Chinese college students were mainly influenced by shame-proneness and some personality

factors (e.g., neuroticism and introversion-extraversion; Li et al. [2003]). Li et al. [2005] also established a structural relation model of social anxiety, shame and personality traits (e.g., neuroticism and introversion-extraversion) among Chinese adolescents and found that shame was a mediate variable between personality traits and social anxiety symptoms.

The relationship between personality and social anxiety has been confirmed by numerous studies [Amies et al., 1983; Marteinsdottir et al., 2001; Norton et al., 1997; Trull and Sher, 1994]. A series of researchers, who assessed personality through the NEO-Five factors inventory, found that the neuroticism factor and introversion-extraversion factor of personality correlated with social anxiety [Amies et al., 1983; Darvill et al., 1992; Trull and Sher, 1994]. Li et al. [2003] also found that the personality trait of neuroticism was related to social anxiety for the participants in China, and its weight was second only to shame in that study.

SHAME AND PERSONALITY

Fischer and Tangney [1995] pointed out that shame is one of the so-called self-consciousness emotions and involves the central self. Personality is generally recognized as "an individual's characteristic pattern of thought, emotion and behavior, together with the psychological mechanisms, hidden or not, behind those patterns" [Funder, 1997]. It presents the consistency and continuity of self. Although it is hard to empirically prove the bond between shame and self, some theorists [Lewis, 1971; Lewis et al., 1992; Nathanson, 1992; Schore, 1998] suggest that shame is promoted by the early childhood disruption in an individual's sense of connectedness; at the same time, such distresses also produce the sense of incompetence, which shifts attention to the self and helps fix self-perception by degrees. Consequently, it implicates that shame is possibly related to some negative personality traits about the incompetent or awful self.

Although these theorists suggested a connection between shame and personality, only few empirical investigations of this relationship were found in the literature. One empirical study showed that shame is negatively associated with agreeableness, conscientiousness and extraversion scores in NEO-Five factors inventory [Abe, 2004]. In China, Zhong et al. [2002, 2003] revealed that shame played a mediating role between personality traits and mental health, whereas personality had an indirect effect upon shame and a direct effect upon mental health. Among the three factors of the Eysenck Personality Questionnaire (EPQ), psychoticism, neuroticism and introversion-extraversion, shame had the strongest connection with neuroticism and introversion. Thus an inference could be drawn that the shame-prone individuals may tend to be more neurotic and introverted.

SHAME IN DIFFERENT CULTURES

Shame is a socially oriented emotion. The experience of shame may have different impacts on individuals from different cultures and ideologies. Recent cross-cultural research studies on shame showed that there were differences in meaning, experiences and subsequent behaviors of shame in different cultures. For example, an emotional words study, conducted by Heider [1991] in three countries including Indonesia, showed finely differentiated aspects of shame in Indonesian language that do not seem to exist in English-speaking cultures. Other research, through various assessments, also found that certain types of shame were more prevalent in Japan and Indonesia when compared to Western cultures [Crystal et al., 2001; Kitayama et al., 1995; Lebra, 1976]. Ratanasiripong [1997] found that when compared with European-Americans', Asian-Americans' experiences of shame were both more frequent and prevalent. This study also revealed that shame was significantly related to dependence. Szeto-Wong [1997] found similar results, in that the level of shame in Asian-Americans is higher than in Caucasian-Americans.

Shame may have different roles in different cultures. Many researchers consider traditional Eastern culture as the *shame culture*, whereas traditional Western culture is the *guilt culture* [Frank et al., 2000; Johnson et al., 1987; Qian and Qi, 2002; Shi and Qian, 1999; Xie and Qian, 2000]. In India, shame is considered a healthy emotion and an antidote to rage [Menon and Shweder, 1994]. In China, people advocate "having a sense of shame," and regard it as an important moral aspect. Wilson [1980, 1981] found that *shaming* is a moral training technique in China, and people who act against social norms are ostracized and abandoned by the group. In Western countries, the meaning of shame is narrow and extreme, so that feeling shame is serious and regarded as the demoralization to oneself. It was not shame, but guilt that was shown to promote empathy and facilitate responsible and constructive reaction against rage [Fischer and Tangney, 1995; Tangney, 1995].

The aforementioned research suggested that shame, personality and social anxiety are closely related. In China, based on the studies of relations of shame, personality and mental health, researchers established a triangular structural model and revealed that shame had a partially mediating role between personality and mental health [Zhong et al., 2002, 2003]. Li et al. [2005] established a structural model of shame, personality and social anxiety during a study of Chinese adolescents, and he found that shame was a mediate variable between personality and social anxiety symptoms. The participants of these two studies were all Chinese college students, therefore these questions are generated: Regarding the model in which shame is the mediate variable between personality and social anxiety, can the place of shame, as a mediate variable, be

confirmed in a Western sample? Rather, is there a different model, one unique to the Western culture?

Although one Japanese researcher pointed out that, theoretically, the differences in social anxiety disorder between Japanese and Americans may be related differences in shame-proneness [Oknao, 1994]. No empirical cross-cultural research was found on the existence of a relationship between shame and social anxiety symptoms. Therefore, this research project aimed to: test the relationship between shame, personality and social anxiety symptoms in Chinese and American non-clinical samples; use structural equation modeling (SEM) to explore the relationship model constructed by the three factors; and compare the Chinese model and American model with each other.

The hypotheses of this study were as follows.

Hypothesis 1: The model of the relationship among shame, personality and social anxiety in the Chinese sample is different from that in the American sample.

Hypothesis 2: For the Chinese sample, in comparison to that of the American, shame has more important effects on social anxiety in the personality-shame-social anxiety model, which means shame may be a mediator between personality and social anxiety symptoms. This hypothesis is further specified in the following competitive models. *Hypothesis 2.1:* In the Chinese sample, there is a triangle model in which shame function as a mediator of the indirect effect in addition to the direct effect between personality and social anxiety (see Model A1 in Fig. 1). Alternatively, *Hypothesis 2.2* states that, in the Chinese sample, there is no direct effect from personality to social anxiety. Shame has a full-mediating role between personality and social anxiety (see Model A2 in Fig. 1).

Hypothesis 3: In the American sample, shame is not a mediate variable between personality and social anxiety. This hypothesis is further specified by the following competitive models. *Hypothesis 3.1:* Shame has no direct effect on social anxiety in the American sample (see Model B1 in Fig. 1). Alternatively, *Hypothesis 3.2* specifies that shame has independent effect on social anxiety (see Model B2 in Fig. 1). If Hypothesis 3.2 is supported by the data, the moderating effect of shame in Model B2, that is, the interaction between shame and personality on social anxiety, will be examined as a follow up analysis.

METHODS

SAMPLE

The US sample consisted of 211 college students (males, 66; females, 145) from a Midwestern public university with the mean age of 20.22 years ($SD = 1.90$). Students from this sample may have certain religious beliefs but did not have a specific religious orientation. Of this sample, 92.4% were Caucasian, 3.8% were African-American, 1.9% were Asian and 0.9% were Hispanic. The remaining 0.5%

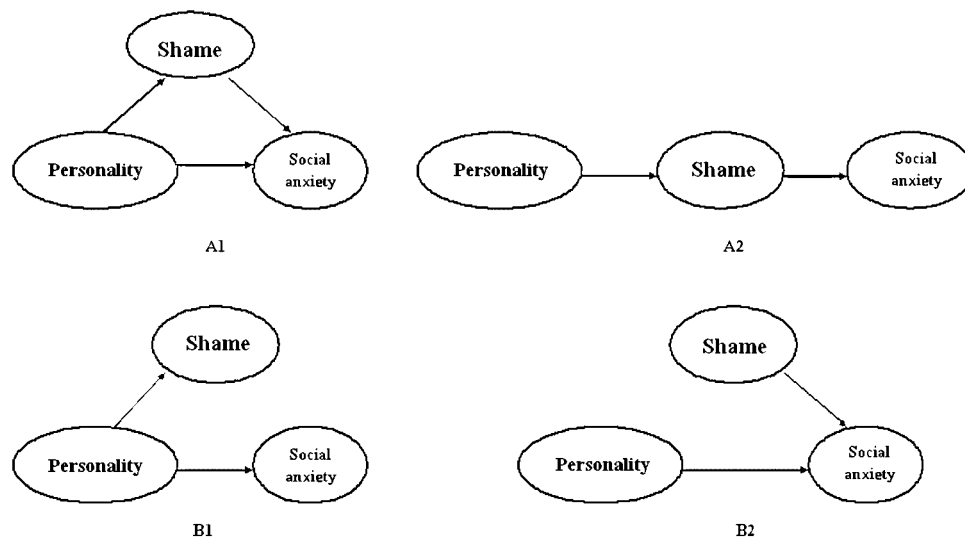


Figure 1. Four models of the relationship between shame, personality, and social anxiety.

were “other.” Chinese subjects were selected from a larger sample pool of Peking University students by matching the age and gender (males, 66; females, 145) with the US participants. The mean age of the Chinese sample is 20.12 years ($SD = 1.56$). All the Chinese participants belong to the Han nation that represents approximately 90.56% of the population in China.

ASSESSMENT

The instruments used in this research were the Experience Scale of Shame [Qian et al., 2000], the EPQ-revised Short Scale for Chinese [EPQ-RSC; Eysenck and Eysenck, 1996; Qian et al., 2000a] and the Social Anxiety Inventory [SAI; Qian et al., 2005].

The Experience Scale of Shame contains a total of 29 items and measures four areas of shame: characterological shame, behavioral shame (BES), bodily shame (BOS) and family shame. Questions in this scale relate to how often they felt shame in different conditions. Subjects were asked to rate each item from “1” (not at all) to “4” (often). Higher scores indicated higher levels of shame proneness. The validation of the Chinese version of this scale conducted on 984 Chinese college students [Qian et al., 2000] revealed that the test-retest reliability was 0.88, and the internal reliability of each subscale measured by the Cronbach α ranged from 0.70 to 0.86. The English version was received by translation and back-translation several times. The validation of the English version of this scale conducted among 163 English college students revealed that the test-retest reliability was 0.83 and the internal reliability of the whole scale measured by Cronbach α was 0.92 [Andrews et al., 2002].

In the Chinese sample, we used a Chinese version of the EPQ-revised Short Scale [Eysenck and Eysenck, 1996] translated by Qian et al. [2000a]. The scale

contains 48 items and consists of four subscales: Neuroticism (N), Extraversion (E), Psychoticism (P) and Lie (L). The number of items in each subscale of the Chinese revision is the same as the items in the original scale. The test-retest reliability of each subscale was 0.80, 0.88, 0.67 and 0.78, respectively, and the internal reliability of each subscale measured by Cronbach α was in the 0.74–0.78 range (except for the P subscale: 0.60). The English version used in the American sample was received by translation and back-translation several times.

The SAI inventory (Chinese version) was developed by Qian et al. [2005], and items were based on diagnostic items in the DSM-IV and the ICD-10. The SAI employs a 5-point Likert scale, and the inventory contains 22 items and consists of three subscales: Tension and Anxiety (TA), Social Interaction Sensitivity (SIS) and Social Interaction Confidence (SIC). The test-retest reliability of the SAI was 0.90. The internal reliability of the scale measured by Cronbach α was 0.77, and the internal reliability of each subscale was 0.80, 0.72 and 0.72, respectively. Zhang et al. [2006] found the Pearson's correlation between the TA and Social Phobia Scale [Mattick and Clarke, 1998] and Social Interaction Anxiety Scale [Mattick and Clarke, 1998] to be 0.57 ($P < 0.005$) and 0.62 ($P < 0.001$); the correlation between SIS, Social Phobia Scale and Social Interaction Anxiety Scale were 0.57 ($P < 0.005$) and 0.63 ($P < 0.001$). The English version used in the American sample was received by translation and back-translation several times. In the above study [Zhang et al., 2006], researchers tested the reliability in an American sample and found that the internal reliability (Cronbach α) of the total scale was 0.91, and each subscale was 0.86, 0.84 and 0.82, respectively. Among the three subscales, TA and SIS were related with social anxiety symptoms [Qian et al.,

2005]. Therefore, these two dimensions were selected for statistical analysis.

PROCEDURE

Each scale had two versions: the Chinese version (for Chinese subjects) and the English version (for American subjects). Data were collected similarly for both samples: subjects completed the proper version of all three scales above in a lump, and all the scales were anonymous. Statistical analyses, such as multivariate analysis of variances (MANOVA), correlation and SEM, were then conducted separately for the Chinese and American samples. SEM analysis was undertaken using the AMOS structural equation-modeling program [Arbuckle and Wothke, 1999].

RESULTS

MANOVA

The main effects of country, gender and their interactions on the measures of shame, personality and social anxiety were analyzed using a MANOVA.

Table 1 shows the means and standard divisions of each variable and results of *F*-tests. There was a significant interaction between the variables country and gender, $F_{(11,408)} = 2.386, P < 0.01$. The main effects of both country ($F_{(11,408)} = 38.670, P < 0.001$) and gender ($F_{(11,408)} = 6.689, P < 0.001$) are significant. The results of univariate analyses of each variable are also shown in Table 1. Compared with subjects in America, Chinese subjects had significantly higher scores ($P < 0.01$) on tension and anxiety, social interaction sensitivity, SAI total score (this score showed sum of TA and SIS), Psychoticism and Lie, and Chinese subjects had significantly lower scores ($P < 0.01$) on BOS, BES, shame total score and extraversion.

SEM ANALYSIS

Correlations. Table 2 shows the matrix of the Pearson's correlation among each subscale of SAI, SS and EPQ-RSC in the Chinese and American samples. According to the results shown in the tables, most of the correlations among each factor are above 0.30

TABLE 1. MANOVA and descriptive statistics of variables for Chinese and American samples

Measure	Chinese male	Chinese female	American male	American female	Country	Gender	Country × gender
	<i>N</i> = 66	<i>N</i> = 145	<i>N</i> = 66	<i>N</i> = 145			
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
TA	26.74 (7.05)	23.35 (7.28)	20.51 (7.53)	17.74 (6.35)			
<i>F</i> (ANOVA)					65.21**	17.62**	.18
SIS	16.42 (4.91)	16.93 (4.09)	11.77 (4.25)	11.39 (4.58)			
<i>F</i> (ANOVA)					112.52**	.88	.02
SAI total	43.67 (9.78)	39.77 (11.12)	32.29 (10.97)	29.13 (10.15)			
<i>F</i> (ANOVA)					98.48**	10.10**	.11
CS	25.21 (6.56)	25.14 (7.27)	23.88 (7.24)	24.06 (6.99)			
<i>F</i> (ANOVA)					2.67	.01	.03
FS	5.55 (1.99)	6.09 (2.38)	6.43 (2.98)	6.04 (2.62)			
<i>F</i> (ANOVA)					2.49	.09	3.10
BOS	6.53 (2.82)	7.46 (2.91)	9.37 (3.63)	11.30 (2.84)			
<i>F</i> (ANOVA)					113.22**	20.60**	2.55
BES	20.65 (4.88)	20.78 (5.16)	21.50 (5.40)	22.84 (5.20)			
<i>F</i> (ANOVA)					7.18**	1.83	1.25
SS total	57.94 (12.95)	59.47 (14.20)	61.44 (14.20)	64.36 (14.40)			
<i>F</i> (ANOVA)					8.04**	2.27	.22
EPQ-P	2.97 (1.68)	2.79 (1.72)	2.68 (2.08)	1.63 (1.37)			
<i>F</i> (ANOVA)					16.94**	12.37**	6.10*
EPQ-E	7.56 (2.86)	7.90 (2.75)	8.76 (3.01)	9.02 (3.02)			
<i>F</i> (ANOVA)					14.47**	.97	.01
EPQ-N	5.03 (3.30)	5.25 (3.12)	4.70 (3.11)	6.01 (3.23)			
<i>F</i> (ANOVA)					.42	5.22*	2.67
EPQ-L	4.64 (2.15)	5.66 (2.60)	3.87 (2.23)	3.35 (2.22)			
<i>F</i> (ANOVA)					38.67**	1.02	9.72**
<i>F</i> (MANOVA)					6.689**	38.670**	2.389**

MANOVA, multivariate analysis of variance; ANOVA, analysis of variance; TA, tension and anxiety in SAI; SIS, social interaction sensitivity in SAI; SAI total, sum of TA and SIS; CS, characterological shame; FS, family shame; BOS, bodily shame; BES, behavioral shame; SS total, total of shame score; EPQ, Eysenck Personality Questionnaire; EPQ-P, psychoticism; EPQ-E, extraversion; EPQ-N, neuroticism; EPQ-L, lie; SAI, Social Anxiety Inventory. The following abbreviations have the same indications.

* $P < .05$; ** $P < .01$.

TABLE 2. Pearson's correlations among each factor of the total measures in Chinese and US sample

Measure	TA	SIS	CS	FS	BOS	BES	EPQ-P	EPQ-E	EPQ-N	EPQ-L
SIS	.61**									
	.71**									
CS	.50**	.56**								
	.54**	.60**								
FS	.12	.12	.31**							
	.25**	.24**	.42**							
BOS	.22**	.34**	.49**	.25**						
	.14*	.25**	.45**	.15*						
BES	.42**	.56**	.67**	.28**	.50**					
	.34**	.43**	.68**	.31**	.45**					
EPQ-P	-.01	-.07	.06	.04		-.07				
	.07	.02	.01	.13	-.22**	-.07				
EPQ-E	-.44**	-.32**	-.47**	-.10	-.20**	-.30**	.03			
	-.51**	-.39**	-.41**	-.24**	-.15*	-.26**	.03			
EPQ-N	.42**	.44**	.54**	.26**	.40**	.45**	.05	-.43**		
	.45**	.50**	.45**	.16*	.31**	.36**	-.03	-.40**		
EPQ-L	.02	-.11	-.09	-.11	-.09	-.15*	-.05	-.09	-.03	
	-.12	-.08	-.10	-.03	.01	.02	-.01	-.01	-.15*	

Note: The first line of each cell presents Chinese sample statistics. The second line of each cell presents US sample statistics.

TA, tension and anxiety in SAI; SIS, social interaction sensitivity in SAI; SAI total, sum of TA and SIS; CS, characterological shame; FS, family shame; BOS, bodily shame; BES, behavioral shame; SS total, total of shame score; EPQ, Eysenck Personality Questionnaire; EPQ-P, psychoticism; EPQ-E, extraversion; EPQ-N, neuroticism; EPQ-L, lie; SAI, Social Anxiety Inventory.

* $P < .05$; ** $P < .01$.

($P < 0.01$) except for the correlations between psychoticism score, lies core and other variables.

Model specification and model estimation. Model A1 in Figure 2 shows the specified full model of this study. In this model, personality was treated as an exogenous latent variable; shame and social anxiety were treated as endogenous latent variables; characterological shame, family shame, BOS and BES were endogenous indicators of shame; tension, anxiety and social interaction sensitivity were endogenous indicators of social anxiety; ϵ_1 to ϵ_{10} were measurement errors. Previous research documented that the psychoticism score did not have significant relation with extraversion and neuroticism scores in EPQ-RSC [Qian et al., 2000a]. Another study showed that the path from psychoticism to latent variable (personality) was not significant and can be eliminated [Zhong et al., 2002, 2003]. The results in Table 2 of this study also reveal the nonsignificant correlations between the P factor and other variables. Thus the N and E were treated as the exogenous indicators of personality in this study, and the P factor was not included.

The estimations of the models were conducted in the Chinese sample and the American sample separately by the maximum likelihood method. When comparing several possible models, the following strategies were used: (1) evaluates all possible models and then (2) finds the most appropriate model that may be both fit and comparatively parsimonious [Jöreskog and Sörbom, 1996].

Estimating the model in the Chinese sample. The standardized regression weights and the variances-

explained percentage in social anxiety of Model A1 are shown in Table 3. It was revealed that path "b" (see Fig. 2), the direct path from personality to social anxiety was not significant, and the standardized regression weight is 0.340 (Critical Ratio [CR] = -1.726, $P = 0.084 > 0.05$). Path "b" ($b = 0$) was then deleted in a modified model and specified as Model A2, which is a nested model of Model A1. The standardized regression weights and the variances-explained percentage in social anxiety of Model A2 are also shown in Table 3. All standardized regression weights in Model A2 are significant ($P < 0.01$).

Table 4 shows some model fit indexes of Models A1 and A2 in the Chinese sample. It is shown that this fitting indexes of goodness-of-fit index, Bentler-Bonett normed fit index, Tucker-Lewis index and comparative fit index in both models are above 0.9, the adjusted goodness-of-fit index are approximately 0.9 and the root mean square error of approximation are about 0.08. It suggests that both of the two models fit well with the data. Nested model comparisons were then conducted to find the final model.

To compare the nested model with the full model, a likelihood ratio test was used to test the change of χ^2 and degrees of freedom of the two models. If the difference between the two models is significant, it indicates the change of the model is an improvement [Wang, 1999]. The result of the likelihood ratio test is shown in Table 5. When degrees of freedom increase for 1, the change of χ^2 of Model A2 compared with Model A1 is 3.806 ($P = 0.051$). Considering the principle of selecting a parsimonious model, Model

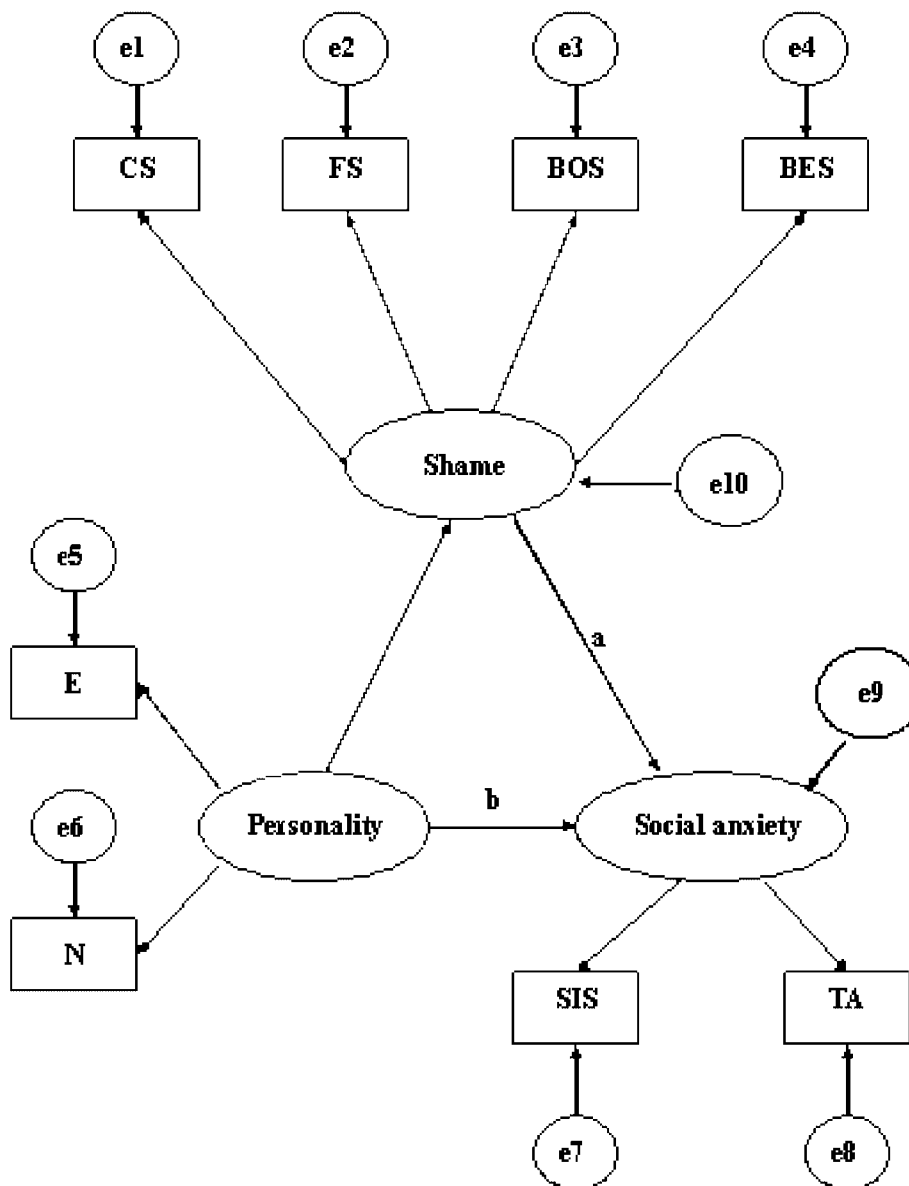


Figure 2. The specified model.

A2 was finally accepted because it was more parsimonious and comparatively accurate. This result suggests that the direct path “b” from personality to social anxiety can be eliminated and shame has a full-mediating role between personality and social anxiety. Consistent with Hypothesis 2.2, the Chinese model is a linear model (personality to shame—to social anxiety).

Estimating the model in the American sample. The standardized regression weights and the variances-explained percentage in social anxiety of the Model A1 with the American sample are shown in Table 6. Path “a” (see Fig. 2), the direct path from shame to social anxiety, was not significant, and the standardized regression weight is 0.151 (CR = 0.892,

$P = 0.382 > 0.05$). Path “a” ($a = 0$) was then deleted in a modified model and specified Model B1, which is another nested model of Model A1. The standardized regression weights and the variances-explained percentage in social anxiety of Model B1 are also shown in Table 6. All standardized regression weights in Model B1 are significant ($P < 0.01$).

Table 7 shows some model fit indexes of Models A1 and B1 in the American sample. It is shown that the fitting indexes of the goodness-of-fit index, adjusted goodness-of-fit index, Bentler-Bonett normed fit index, Tucker-Lewis index and comparative fit index in both models are all above 0.9, and the root mean square error of approximation are between 0.07 and 0.08. It suggests that both of the two models fitted well

with the data. The nested model was then compared to identify the better model.

The result of the likelihood ratio test was shown in Table 8. When degrees of freedom increase by 1, the change of χ^2 of Model B1 compared with Model A1 was not significant ($P = 0.451 > 0.05$). Model B1 was accepted because it was a more parsimonious. This result suggests that the direct path “a” from shame to social anxiety can be eliminated and shame is not a mediate between personality and social anxiety. The result is consistent with Hypothesis 3.1, that is, in the American model, personality has direct effect on both shame and social anxiety but shame has no direct effect on social anxiety. Because the path “a” was not significant in the US sample, Hypothesis 3.2 was not supported. Therefore, there was no need to further test the moderating effect of shame in the Model B2.

DISCUSSION

To select the most appropriate model, it is necessary to specify several possible models and compare them with each other. When conducting model comparisons, the differences between the models were compared in

TABLE 3. Standardized regression weights and the variances-explained percentage in social anxiety of models in Chinese sample

Regression weights	Model A1	Model A2
Shame ← personality	-0.822**	-0.841**
Social anxiety ← personality	-0.397	0
Social anxiety ← shame	0.442*	0.786**
CS ← shame	0.875**	0.867**
FS ← shame	0.341**	0.337**
BOS ← shame	0.571**	0.568**
BES ← shame	0.781**	0.779**
E ← personality	0.587**	0.580**
N ← personality	-0.738**	-0.747**
SIS ← social anxiety	0.818**	0.836**
TA ← social anxiety	0.742**	0.727**
Variances in social anxiety explained by the model (%)	64	62

CS, characterological shame; FS, family shame; BOS, bodily shame; BES, behavioral shame; E, extraversion; N, neuroticism; SIS, social interaction sensitivity in SAI; TA, tension and anxiety in SAI; SAI, Social Anxiety Inventory.

* $P < .05$; ** $P < .01$.

TABLE 4. Model fit indexes of models in Chinese sample

	CMIN	DF	P	GFI	AGFI	NFI	TLI	CFI	RMSEA (90% CI)
Model A1	40.247	17	0.001	0.951	0.896	0.934	0.934	0.960	0.081 (0.049–0.113)
Model A2	44.053	18	0.001	0.948	0.896	0.928	0.930	0.955	0.083 (0.052–0.114)

CMIN, minimum fit function χ^2 ; DF, degrees of freedom; P, χ^2 test compared with saturated model; GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; NFI, Bentler–Bonett normed fit index; TLI, Tucker–Lewis index; CFI, comparative fit index; RMSEA, root mean square error of approximation; 90% CI, 90% confidence interval. The following abbreviations have the same indications.

terms of their fitness to the data. If there is no significant difference, the more parsimonious model will be preferable [Wang, 1999]. According to the results of model comparison, this study revealed that: (1) For the Chinese sample, Hypothesis 2.2 is supported and Model A2 is better than Model A1 because the regression weight from personality to social anxiety symptom is not significant (see Table 4). Although the result of model comparison reveals that the change of χ^2 in Model A2 compared with Model A1 is marginally significant (Table 5), the Model A2, a linear model (personality-shame-social anxiety) is more parsimonious and comparatively accurate according to the principle of selecting a parsimonious model. That is, the Model A2 is more competitive than Model A1 and becomes the best model for the Chinese sample. Therefore, the interaction between shame and personality on social anxiety is not examined because personality does not have a direct impact on social anxiety. Its impact was mediated through the factor of shame. (2) For the American sample, Hypothesis 3.1 is supported and Model B1 is identified as a better model compared with Model B2 because the regression weight from shame to social anxiety symptoms is not significant (see Table 7), which means the personality factor has a direct effect on both shame and social anxiety. That is, the Model B1 is more suitable for the US sample than the Model B2. It also suggests that shame has neither the mediating role nor moderating effect between personality and social anxiety among the American sample.

Numerous studies have revealed correlations between shame and social anxiety in the US population [Gilbert, 2000; Gilbert et al., 1994; Mills, 2005]. The finding that there is no direct pass from shame to social anxiety (Model B1) in the current study seems contradictory to the previous findings. However, previous research only examined the relationship between these

TABLE 5. Likelihood ratio test for nested model comparison in Chinese sample

	Model A2 comparing with Model A1
DF	1
CMIN	3.806
P	0.051

CMIN, minimum fit function χ^2 ; DF, degrees of freedom.

two variables, but did not further examine what type of relationship existed between these variables. The impact of other variables to this relationship was not examined either. The present research, using the SEM approach, further reviewed that the personality factor is the one that influences both shame and social anxiety in the US culture. Although the model revealed no direct path, it does not mean there is no relationship between shame and social anxiety. It only indicates that this relationship is indirect, and this relationship needs to go through the factor of personality for US participants. This finding provided a more meaningful and more specific interpretation of this relationship. It also provided more distinguishable models of the relationship among shame, personality and social anxiety for both the US and the Chinese populations.

The findings indicate that the models are different between the Chinese and the American samples. Hypothesis 1 is therefore supported. The results suggest that shame has more important and stronger influences on social anxiety in the Chinese sample. We argue that this finding may relate to the Chinese culture. As indicated previously, people in China emphasize the educating role of shame, advocate

“having a sense of shame” and regard shame as an important aspect of moral judgment [Li et al., 2004; Qian et al., 2001]. For example, Chinese usually pay more attention to “saving face,” wherein the supreme value lies in the preservation of honor both for the family and the self. As a core factor in the psychopathological development of many mental disorders, shame has an important influence on an individual’s mental health, especially social anxiety [Tripp and Petrie, 2001; Zhong et al., 2003]. The results in this study supported the notion that China is mainly a shame culture because the meaning of shame is more salient in Chinese culture [Li et al., 2004]. In contrast, in American culture, shame may be a narrower concept. For instance, compared to Eastern culture (e.g., Japan, Indonesia, India and China), shame is less prevalent in English-speaking countries according to various assessments [Heider, 1991; Kitayama et al., 1995; Li et al., 2004; Menon and Shweder, 1994]. Because of the more important role shame plays in causing social anxiety symptoms, more attention must be focused on shame when intervening with Chinese patients with social anxiety.

This study found that the American sample had higher shame and lower social anxiety than that of the Chinese sample (see Table 2). Chinese subjects had reported significantly lower scores on BOS, BES and the overall shame score. These results are inconsistent with previous studies [Lutwak et al., 1998; Ratanasiripong, 1997; Szeto-Wong, 1997], which reported that Asian-Americans were more prone to shame in general. This inconsistency may relate to the cultural background of the two countries. In Chinese society, people are more implicit and it is encouraged “not to reveal one’s happiness and rage on one’s face,” and not to express one’s own emotions. Alternately in American culture, people are more open to expressing one’s

TABLE 6. Standardized regression weights and the variances-explained percentage in social anxiety of models in American sample

Regression weights	Model A1	Model B1
Shame ← personality	-0.717**	-0.757**
Social anxiety ← personality	-0.767**	-0.914**
Social anxiety ← shame	0.148	0
CS ← shame	0.964**	0.962**
FS ← shame	0.431**	0.431**
BOS ← shame	0.469**	0.470**
BES ← shame	0.709**	0.710**
E ← personality	0.603**	0.583**
N ← personality	-0.656**	-0.632**
SIS ← social anxiety	0.855**	0.853**
TA ← social anxiety	0.826**	0.828**
Variances in social anxiety explained by the model (%)	77	83

CS, characterological shame; FS, family shame; BOS, bodily shame; BES, behavioral shame; E, extraversion; N, neuroticism; SIS, social interaction sensitivity in SAI; TA, tension and anxiety in SAI; SAI, Social Anxiety Inventory.

* $P < .05$, ** $P < .01$.

TABLE 8. Likelihood ratio test for nested model comparison in American sample

	Model B1 comparing with Model A1
DF	1
CMIN	0.569
P	0.451

CMIN, minimum fit function χ^2 ; DF, degrees of freedom.

TABLE 7. Model fit indexes of models in American sample

	CMIN	DF	P	GFI	AGFI	NFI	TLI	CFI	RMSEA (90% CI)
Model A1	37.366	17	0.003	0.954	0.902	0.942	0.946	0.967	0.076 (0.042–0.109)
Model B1	37.935	18	0.004	0.954	0.907	0.941	0.950	0.968	0.073 (0.040–0.105)

CMIN, minimum fit function χ^2 ; DF, degrees of freedom; P , χ^2 test compared with saturated model; GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; NFI, Bentler–Bonett normed fit index; TLI, Tucker–Lewis index; CFI, comparative fit index; RMSEA, root mean square error of approximation.

innermost experiences. Wang [2001] conducted a study to analyze the earliest event in the memory of American and Chinese college students by self-report and found that events reported by American subjects often accompanied strong emotional experiences, whereas events reported by Chinese subjects were often emotion-neutral. In the previous research, all subjects lived in Western countries. This experience may have helped Asian-American participants to report their emotional feelings in a degree that is similar to that of the US participants. However, in this study, none of the Chinese participants had any experience of living in a Western society. The strength of their emotional feelings reported by these subjects may not be as strong as what they actually had in their inner realities. In addition, Chinese people's attitude of *being neutral* and the characteristic of not going to either extreme in emotions might also play a role in this difference.

This study also reveals that Chinese subjects had significantly higher scores on TA, SIS and SAI total score. This suggests that Chinese college students may have higher social anxiety symptoms than American college students. Chinese are more sensitive to the judgment of other people and more concerned about one's own performance in front of other people. These characteristics may be one of the reasons for the higher social anxiety in Chinese subjects. This finding confirms the conclusions of previous cross-culture studies. For example, Abe et al. [1996] found the scores of social anxiety to be significantly higher for Japanese than Americans and showed differences between Western and Eastern cultures.

Another possible reason that the Chinese sample rates themselves higher on social anxiety symptoms and lower on shame in comparison to that of the Americans may relate to how these attributes were measured and what framework of references were used by the participants. It was found that US students tend to rate themselves significantly higher than did the Chinese students on scales that measure items related to self-evaluation [Meredith and Wang, 1993]. Wang et al. [1996] suggested that this is due to the fact that the framework of the comparisons used by the US students and the Chinese students were different. Using the Cultural Probe Approach, Wang and Ren [2004] found that when measuring merely facts or status of self-related items with no self-evaluation involved, Chinese students rated themselves significantly more positively than that of the US students [see also Wang, 2004, August; Wang and Bergen, 2005], although previous research using evaluative items has consistently found that US students rated themselves more positively than did the Chinese students. The scale that measures shame in this study has self-evaluation questions, for example, "Do you ever feel ashamed of your way of getting along with others?" The items in SAI, on another hand, are more descriptive and directly relate to self-statues and facts, e.g., "I usually feel my heart beating faster during social

situations." It is very likely that the Chinese sample has experienced stronger shame feelings but did not report as strongly as did the US students due to the fact that the items are self-evaluation related but has more accurately rated themselves on social anxiety symptoms because the items are more facts or status related.

This study also found that Chinese subjects had lower scores of extraversion and higher score of psychoticism and lie than American subjects. This finding is similar to previous cross-cultural studies on personality assessment. Furnham and Cheng [1999] assessed personality in Hong Kong, Japan and England using the EPQ and found that the Hong Kong sample and Japanese sample had lower extraversion and higher psychoticism and lie than American subjects. Timothy and David [1997] used the 50-item Bipolar Rating Scale, which consists of big-five factors, to measure personality among Chinese and American college students. Results showed that Chinese subjects were more introverted. This finding may also be related to culture. American culture encourages exploration extrorsely and highly regards innovation, whereas Chinese culture encourages exploration introrsely and regards introspection as the road to inner peace and happiness [Ge, 1995]. Besides, the higher Lie score for Chinese subjects may be attributed to some characteristics of Chinese culture, such as implicitness and discouragement to express emotions. Moreover, because East Asian people are more concerned about their own performance in front of other people and judgment by other people, they may have higher social desirability than Western people [Keillor et al., 2001; Middleton and Jones, 2000].

SAI scores are significantly positively correlated with all factors of shame and EPQ-N, and significantly negatively correlated with extraversion both in Chinese subjects and American subjects. This finding is consistent with previous studies [Hirshfeld-Becker et al., 1999; Li et al., 2003; Zhong et al., 2003]. It suggests that shame and personality both have important effects on social anxiety. Among all factors in personality, extraversion and neuroticism, rather than psychoticism, have stronger relationship with social anxiety. The findings showed similarity with other research on several measurement of personality, such as research using the NEO-Five Factors Inventory [Amies et al., 1983; Darvill et al., 1992; Trull and Sher, 1994] and research using the EPQ [Hirshfeld-Becker et al., 1999; Li et al., 2003; Zhong et al., 2003]. In addition, total shame scores are significantly positively correlated with EPQ-N and significantly negatively correlated with extraversion both in Chinese and American subjects. This finding also consists with previous studies [Zhong et al., 2003]. It suggests that neuroticism has a close relation with shame, and shame will probably decrease along with the increase in extraversion.

Although this study revealed the different roles of shame in the model of shame, personality and social anxiety between Western and Eastern cultures by

empirical methods, there are still some limitations. First, this study might have bias in the sampling process. Although the areas where the samples were drawn from China and the United States are representative to a large area of each nation, both the United States and China are huge countries with within-cultural variations, such as the cultural difference between urban and rural populations. The religious beliefs among different ethnic groups in both countries may also relate to the sense of shame. Caution needs to be made when generalizing the findings of this study to a larger and more diverse population. Second, as the interaction was significant between the country and gender, the ideal models should be analyzed by gender and country separately. However, it is impossible to do in this study due to the limited number of participants. Future investigation should examine the models separated by gender and culture.

This study found that shame is a mediator between the Chinese personality and social anxiety. The shame factor did not play the same role in the American sample. This empirical study supports the hypothesis that shame has a more important effect on social anxiety in the Chinese culture, compared to its effect on Americans. This result, if it is repeatable, can lead to a new idea to the clinician on how to choose different treatment plan for social anxiety patients in China and the United States. In China, treatment of the shame feeling is more important for the social anxiety patients than in that of the US. To test the results of this study in clinical practice, carefully investigated studies should be conducted among the patients with social anxiety in both the Eastern and Western cultures.

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