



## Self-construal and social anxiety: Considering personality

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### ABSTRACT

Self-construal has been identified as a potential means to explain cultural differences in social anxiety. Yet, research findings suggest that self-construal is an individual difference as much as a cultural difference. We tested for mediation and moderation regarding self-construal, social anxiety, and other primary individual difference constructs. Our results indicated that the relation of extraversion and neuroticism to social anxiety was partially mediated by independent self-construal. In addition, the relationship between social anxiety and interdependent self-construal was moderated by neuroticism. These results suggest that personality traits play an important role in the relationship between social anxiety and self-construal. Clinical interventions that consider the interplay between self-construal and personality may be helpful in decreasing social anxiety.

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### 1. Introduction

Cultural norms, values, and beliefs are thought to be powerful forces that shape differences between cultures (Triandis, 1989) and may influence the development of psychopathology (Eshun & Gurung, 2009). Such factors have been of particular interest regarding problematic social anxiety (Caldwell-Harris & Ayçiçeği, 2006; Heinrichs et al., 2006; Xie, Leong, & Feng, 2008). Specifically, self-construal has emerged as a potentially important construct in explaining cultural differences (Markus & Kitayama, 1991). Self-construal is conceptualized as a constellation of thoughts, feelings, and actions concerning one's relationship to others as well as one's self-identity in relation to others (Singelis, 1994). Markus and Kitayama (1991) summarize theory and research regarding two dimensions of self-construal: Independent and interdependent. We base our discussion of these constructs on Markus and Kitayama's (1991) summary of theory and research.

#### 1.1. Independent and interdependent self construal: Cultural and individual differences

According to Markus and Kitayama (1991), independent self-construal is a view of the self that focuses on internal attributes and uniqueness of the self, whereas interdependent self-construal involves a focus on the social connectedness of the self. Markus and Kitayama note that independent self-construal has been de-

finer as “a bounded, unitary, and stable” (p. 226) self whereas an interdependent self-construal is a “flexible and variable” (p. 226) self. People who are higher in independent self-construal are expected to emphasize being unique, promoting one's own goals, and being direct in communication. In contrast, a person with higher interdependent self-construal is expected to see the self as intertwined with others and emphasize public status, social roles, and relationships. Interdependent self-construal has been found to be more prevalent in collectivist cultures such as those of East Asia as compared to the West, in which more emphasis is on independence (Markus & Kitayama, 1991).

Our discussion thus far might be taken to imply that the constructs of independence and interdependence comprise one bipolar dimension, such that being high in one implies being low in the other. However, it has been argued, and shown, that high (or low) levels of both interdependent and independent self-construal can coexist within an individual (Bhawuk & Brislin, 1992; Cross & Markus, 1991; Singelis, 1994). Thus, it seems that self-construal may be best conceptualized not just as a cultural construct, but as an important individual difference that varies both between and within cultures.

#### 1.2. Self construal and social anxiety

Most authors who have previously tested the relationship between social anxiety and self-construal report that social anxiety has a negative relationship with independent self-construal and a positive relationship with interdependent self-construal (Dinnel, Kleinknecht, & Tanaka-Matsumi, 2002; Moscovitch, Hofmann, & Litz, 2005; Norasakkunkit & Kalick, 2009; Okazaki, 1997, 2000; Singelis & Sharkey, 1995). Further, Hong and Woody (2007) found

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that cultural differences in social anxiety between Canadian East Asians and Canadian Caucasians were fully mediated by independent self-construal and partially mediated by interdependent self-construal. Norasakkunkit and Kalick (2009) manipulated independent self-construal using a priming task and found that priming independence led to decreased scores on a social anxiety measure. These results suggest a causal link between independent self-construal and social anxiety.

### 1.3. A model of personality and self-construal

Given the cultural focus of much research regarding self-construal, it would be natural to consider how these variables might help explain cultural differences regarding social anxiety. However, with a growing literature suggesting that self-construal may serve as a crucial individual difference within cultures (e.g., Paukert, Pettit, & Amacker, 2008), it seems important to examine how self-construal interacts with other salient individual differences to produce social anxiety.<sup>1</sup> We believe that personality traits, as captured by the five-factor model, are crucial individual differences that are likely to influence self-construal, as well as the relationship between self-construal and social anxiety.

Theories of the big five factors of personality have found that personality traits generalize and are expressed across cultures (e.g., Katigbak, Church, Guanzon-Lapena, Carlota, & del Pilar, 2002). Thus, we start with the assumption that the constructs of personality and self-construal have an influence on individuals from all cultures (e.g., developmentally) and further, personality is more likely to affect the development of self-construal than self-construal is the development of personality.<sup>2</sup> We make this assumption partially because it seems plausible to us that personality influences the way that cultural messages (such as self-construal) are internalized and expressed, as well as the type of message directed at an individual. For example, within the five-factor model, individuals higher in extraversion are described, in part, as sociable (e.g., Costa & McCrae, 2001). The sociability aspect of extraversion makes it plausible that extraverts would have more exposure to cultural messages conveyed through interpersonal interactions because of their increased likelihood of engaging in social interactions. Further, Mooradian and Swan (2006) found that people higher in extraversion were more likely to rely on information relayed via word of mouth. Thus, we would expect that in Western cultures the predominance of cultural messages promoting independence would lead to higher individualism in people with higher extraversion, who should have more frequent exposure to such messages.

If extraversion does influence self-construal, it is possible that factors related to extraversion might actually be a consequence of self-construal rather than extraversion alone. It is already well established that people with problematic social anxiety tend to have lower extraversion (e.g., Bienvenu et al., 2001), such that (higher) extraversion might be a protective factor for social anxiety disorder. If our analysis is correct, then independence might partially mediate a protective relationship between extraversion and social anxiety. Level of independent self-construal might even be more amenable to change than personality per se, potentially opening up a new avenue for treatment. A clear understanding of how risk and protective factors for social anxiety relate to each other should assist in identifying likely areas for intervention and individuals who are likely to benefit from such interventions.

<sup>1</sup> In the following analyses we examined direct effects for ethnicity and found none. Thus, in the reported analyses we have not included ethnicity and have chosen to focus on individual differences within the culture.

<sup>2</sup> At the same time, we accept the possibility that self-construal, having been affected by an individual's personality, might also have a reciprocal relationship with personality over time.

The available literature provides very few links between self-construal and other individual differences (other than culture of origin). However, it is well established that social anxiety is positively related to neuroticism and negatively related to extraversion (Bienvenu et al., 2001; Kotov, Watson, Robles, & Schmidt, 2007; Trull & Sher, 1994; Watson, Gamez, & Simms, 2005). Thus, we expect that independent self-construal would have the opposite relationships with those personality traits in Western cultures. However, we could only locate one paper that included any big five personality traits (and only agreeableness and extraversion) and self-construal (only interdependent self-construal): In a study that did not focus directly on the relationship of personality to self-construal, Tams (2008) found that interdependent self-construal was correlated with agreeableness. The literature is clearly in need of basic work identifying how these constructs relate to one another.

Of particular interest are potential interactions between self-construal and personality traits related to social anxiety. Specifically, given the consistently reported relationship between social anxiety and neuroticism (typically a medium-sized effect, e.g., Bienvenu et al., 2001), we expect neuroticism and interdependent self-construal to interact to predict social anxiety, such that individuals who are higher in both neuroticism and interdependent self-construal will exhibit particularly high levels of social anxiety. We expect that these individuals' tendencies to be anxious in general will be magnified by their tendency to focus on social relationships, making them particularly vulnerable to problematic social anxiety.

### 1.4. The current study

In the current study we examined the relationship between self-construal, the big five personality traits, and social anxiety. We hypothesized that (a) the relation of extraversion and neuroticism to social anxiety (i.e., because these personality traits consistently exhibit a relationship with social anxiety, Bienvenu et al., 2001), would be mediated by independent self-construal, and (b) interdependent self-construal and neuroticism would interact to predict social anxiety.

## 2. Method

### 2.1. Participants

Participants were 155 individuals (53 men and 102 women) who filled out a questionnaire packet and later completed additional experimental tasks to receive 15 dollars or credit as part of their coursework. One participant was removed from data analyses because of scores three standard deviations away from the mean with an extreme responding pattern on all items such that the same response was given for all items on the same page. We judged that this participant was likely to be responding inappropriately and therefore removed her data. The sample consisted of Caucasians ( $n = 91$ , 59.1%), Asians/Asian Americans ( $n = 46$ , 29.9%), African Americans ( $n = 10$ , 6.5%), and participants who identified as Multiracial ( $n = 6$ , 0.6%); one participant reported her ethnicity was not listed. Of the Asians/Asian Americans, 11 identified themselves as Asian (23.9%) and 35 identified themselves as primarily Westerners (Asian-Americans; 76.1%). The mean age of participants was 19.82 ( $SD = 1.74$ ; Range 18–24) and most participants ( $n = 132$ , 85%) were U.S. citizens ( $n = 22$  were non-U.S. citizens or international students). Participants ranged in generational status from first to fifth or more generations with a mean generational status of 3.19 generations ( $SD = 1.52$ ). Most participants reported English as the primary language spoken in

the home ( $n = 121$ , 78%). However, a minority of participants reported speaking Chinese ( $n = 15$ , 9.7%), Korean ( $n = 14$ , 9.1%), and other ( $n = 4$ , 2.6%) in the home. Social anxiety, as measured by the items of the SIAS (Mattick & Clarke, 1998), ranged from very low to high in the current sample (Range = 0–60,  $M = 23.07$ ). A total score of 34 or higher suggests probable social anxiety disorder (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992).

## 2.2. Measures

The revised self-construal scale (SCS; Kwan, Bond, & Singelis, 1997; Singelis, 1994) is a 30-item measure employing a 7-point Likert scale. It is used to assess the extent to which participants see themselves as independent or interdependent. The SCS is comprised of a 15-item interdependence subscale and a 15-item independence subscale. Example items from the interdependence subscale are: 'I feel good when I cooperate with others' and 'It is important for me to maintain harmony within my group'. Example items from the independent subscale are: 'I enjoy being unique and different from others in many respects' and 'I feel it is important for me to act as an independent person'. High scores on each subscale represent higher levels of interdependence or independence. This measure has been shown to be adequately reliable and valid (Moscovitch et al., 2005). In the current study, both the interdependent ( $\alpha = .75$ ) and independent ( $\alpha = .70$ ) subscale exhibited good internal consistency.

The social interaction anxiety scale (SIAS; Mattick & Clarke, 1998) is a 20-item measure employing a 0–4 Likert-type scale. The items describe anxiety-related reactions to a variety of social situations. High scores on the SIAS indicate higher levels of social anxiety. Overall, research on the scale suggests good to excellent reliability and good construct and convergent validity (see Heimberg & Turk, 2002, for a review). All psychometric examinations of the reverse-scored items of this measure have concluded that they should be removed, as they are here (Rodebaugh et al., in press). In the current study, the straightforward items of the SIAS displayed excellent internal consistency ( $\alpha = .92$ ).

The mini-international personality item pool inventory (MINI-IPIP; Donnellan, Oswald, Baird, & Lucas, 2006) is a 20-item short form measure of the five basic factors of personality: extraversion, neuroticism, agreeableness, conscientiousness, and openness. It is based on the international personality item pool (Goldberg, 1999) and has been shown to have consistent and acceptable internal consistencies, similar coverage of personality facets as other big five measures, and good convergent, discriminant, and criterion-related validity with other big five measures (Donnellan et al., 2006). In the current study its internal consistency ranged from adequate to very good for the five factors ( $\alpha$ s = .65–.83).

Beck depression inventory II (BDI-2; Beck, Steer, & Brown, 1996) is a 21-item self-report instrument that measures depression in adults and adolescents. Items assess symptoms corresponding to criteria for diagnosing depressive disorders. Each symptom is rated for severity based on endorsement of one of a series of statements arranged in order from least to most symptomatic. The BDI-2 has been validated in psychiatric and non-psychiatric samples (Steer, Ball, Ranieri, & Beck, 1997). In the current sample, the BDI-2 exhibited very good internal consistency ( $\alpha = .88$ ). The BDI-2 was included in regressions to ensure that apparent relationships with social anxiety were not better explained by depressive symptoms.

## 2.3. Procedure

Participants completed the above measures as part of a larger study that does not overlap with the results presented here. Participants also filled out demographic and acculturation questionnaires. Tests of indirect effects (i.e., mediation) were conducted

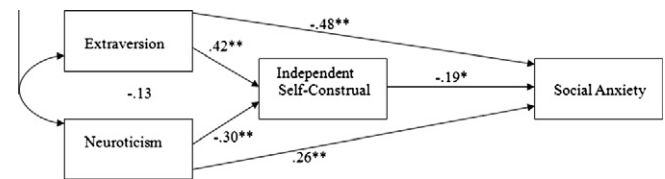


Fig. 1. Model of relationship between extraversion, neuroticism, independent self-construal, and social anxiety. Standardized Coefficients are shown. \*\* $p < .01$ , \* $p < .05$ .

using bootstrapping in the Mplus program Version 5.21 (Muthén & Muthén, 1998–2009). As recommended by Hayes (2009), 5000 draws were implemented. For Fig. 1 the maximum likelihood estimator in the Mplus program was used to report standardized path estimates.

## 3. Results

### 3.1. Ethnic and gender differences

There was a significant difference between Asian-Americans<sup>3</sup> ( $M = 42.48$ ,  $SD = 5.71$ ) and Caucasians ( $M = 40.27$ ,  $SD = 5.11$ ) in interdependent self-construal,  $t(125) = 2.15$ ,  $p = .037$  when individuals identifying as Asian (and not, specifically, Asian-American) were removed. There were no ethnic differences in social interaction anxiety or independent self-construal. An independent  $t$ -test indicated significant gender differences between women ( $M = 41.62$ ,  $SD = 4.91$ ) and men ( $M = 43.60$ ,  $SD = 5.37$ ) for independent self-construal,  $t(153) = -2.28$ ,  $p = .024$ . There was no significant gender difference for interdependent self-construal  $t(153) = .91$ ,  $p = .336$ .

### 3.2. Zero-order correlations

As found in the previous research reviewed in the introduction, social anxiety was significantly correlated with both independent ( $r = -.46$ ,  $p < .001$ ) and interdependent ( $r = .22$ ,  $p = .009$ ) self-construal. As shown in Table 1, independent self-construal was significantly associated with extraversion, neuroticism, and openness. Interdependent self-construal was significantly associated with agreeableness and conscientiousness.

### 3.3. Mediation analyses between personality and social anxiety

In linear regression, both independent (part  $r = -.21$ ,  $p = .019$ ) and interdependent self-construal (part  $r = .21$ ,  $p = .007$ ) significantly predicted social anxiety over and above neuroticism (part  $r = .14$ ,  $p = .113$ ), extraversion (part  $r = -.49$ ,  $p < .001$ ), and depressive symptoms (part  $r = .26$ ,  $p < .001$ ). Subsequent testing demonstrated that independence carried the indirect effects of extraversion and neuroticism on social anxiety. The 95% confidence interval for the indirect effects of extraversion on social anxiety was  $-.323$ – $-.173$ . The 95% confidence interval for the indirect effects of neuroticism on social anxiety was  $.004$ – $.120$ . Because neither of these confidence intervals included 0, the indirect effects were statistically significant at  $p < .05$ . The data thus supported a significant indirect effect on social anxiety by extraversion and neuroticism through independent self-construal. Figure 1 displays a model of the indirect effects on social anxiety carried by independent self-construal. Notably, when depression was added to the first model as a competing mediator, the significant indirect effect of independence was maintained; the indirect effects of indepen-

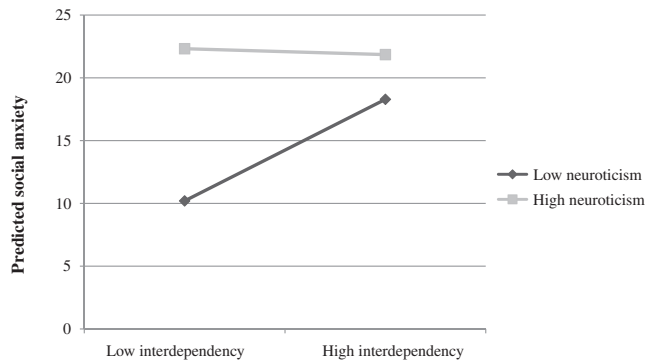
<sup>3</sup> In regard to ethnicity, note that "Asian-American" refers to individuals who self-identified as Asian-American (Western) versus Asian.

**Table 1**  
Zero-order correlations between self construal, social anxiety, and personality measures.

	Interdependence	Independence	SIAS	Extraversion	Neuroticism	Agreeableness	Conscientiousness	Openness
Interdependence	.75							
Independence	-.17*	.70						
SIAS	.24**	-.44**	.92					
Extraversion	-.02	.42**	-.60**	.83				
Neuroticism	.10	-.30**	.35**	-.13	.78			
Agreeableness	.30**	.03	-.15	.17*	.04	.65		
Conscientiousness	.19*	.00	-.11	-.03	-.09	.06	.80	
Openness	.06	.34**	-.04	.04	.03	.20*	-.02	.66

Note: SIAS, social interaction anxiety scale; the diagonal is Cronbach's alpha.

\*\*  $p < .001$ ; \*  $p < .05$ .



**Fig. 2.** Social anxiety predicted by the interaction between interdependency and neuroticism. Predicted social anxiety measured by SIAS score. High and low interdependency values are one standard deviation above and below the mean of interdependency. High and low neuroticism values are one standard deviation above and below the mean of neuroticism.

dent self-construal thus cannot be due to depressive symptoms alone.

### 3.4. Moderation by personality

Neuroticism, interdependent self-construal, and their interaction were entered as predictors in a multiple regression. The interaction between neuroticism and interdependent self-construal significantly predicted social anxiety (part  $r = -.19$ ,  $p = .011$ ). Exploration of this interaction as recommended by Aiken and West (1991) revealed that interdependent self-construal only explained a significant amount of the variance in social anxiety (part  $r = .27$ ,  $p < .001$ ) when neuroticism was low. When neuroticism was higher, the relationship between interdependency and social anxiety was no longer significant (part  $r = -.02$ ,  $p = .845$ ). In Fig. 2 it can be seen that individuals who had higher levels of interdependency and lower levels of neuroticism exhibited higher levels of social anxiety than individuals low in interdependency and low in neuroticism.

## 4. Discussion

Our results indicate that personality traits should not be ignored when considering social anxiety and self-construal. These findings, combined with previous research, suggest that self-construal can explain individual differences not only between cultures (Hong & Woody, 2007), but also within cultures (e.g., Bhawuk & Brislin, 1992). In support of previous research (Dinnel et al., 2002; Moscovitch et al., 2005), both independent and interdependent self-construal were significantly associated with social anxiety. Independent self-construal was negatively associated with social anxiety, whereas interdependent self-construal showed a weaker, positive relationship with social anxiety. Independent self-construal was negatively associated with neuroticism and

positively associated with extraversion. Interestingly, independent self-construal was also significantly associated with openness in the current sample. In addition, interdependent self-construal was significantly associated with agreeableness and conscientiousness.

Turning to our model of social anxiety, personality, and self-construal, we found that independent self-construal explained variance in social anxiety over and above depression, neuroticism, and extraversion. We found support for a model in which independent self-construal partially mediates the relationship between personality (neuroticism and extraversion) and social anxiety. Though we cannot determine causality from the current study, it seems plausible that personality may influence self-construal which may, in turn, protect from (or lead to) social anxiety. Future research should work to establish the causal relationships between these variables (e.g., through longitudinal studies), although it must be noted that one experiment has already demonstrated a potential causal link between independent self-construal and social anxiety (Norasakkunkit & Kalick, 2009).

We originally postulated that neuroticism and interdependence might interact to produce the highest levels of social anxiety. Whereas we found an interaction as expected, the direct effect was not what we had expected: It seems that interdependence may only confer additional risk for individuals who are lower in neuroticism and thus less prone to social anxiety in the absence of an interdependent self-construal. These individuals may be more likely to be socially anxious not because of a general tendency toward anxiety but because believing in the interconnectedness among people leads them to be more concerned about social relationships and their consequences. It may be important to consider the interaction of interdependence and neuroticism when conducting psychotherapy with socially anxious individuals. For example, our results suggest that attempting to reduce interdependent self-construal should have little effect for clients who are high in neuroticism.

These results should be interpreted in light of this study's limitations. Our sample was diverse, but we would have preferred a larger sample of each ethnic group so that we could have explored ethnic differences between each group (i.e., differences between African-American and Caucasian participants). In addition, our sample consisted primarily of college students; self-construal might function differently in other age groups. Future research should test if these results generalize to other populations and cultures. Additionally, self-construal contributed a small amount of variance to social anxiety; however, this finding is consistent with our assumption that self-construal is one of many determinants of social anxiety. Despite the limitations of these data, we believe that these results are a good first step towards understanding the relationship between personality traits, self-construal, and social anxiety.

In regard to our causal model, we found support for personality leading to self-construal, which may in turn cause social anxiety. However, our data are cross-sectional and data from other sources are necessary to determine the direction of effects. We believe a

model of personality primarily affecting self-construal is plausible, but a reciprocal relationship between personality and self-construal also seems likely. For example, in consideration of the personality trait of agreeableness and its relationship to interdependence, agreeableness could have a direct relationship with interdependence because this personality trait would likely lead to cooperation with other people. As the person experiences cooperation with others and develops an interdependent self-construal, his or her agreeable tendencies are likely to be further reinforced because this personality trait is useful for fostering interdependent relationships. In this way, a reciprocal relationship could be formed between the personality trait and the self-construal. In terms of social anxiety's role in this model, we believe that personality has a direct and indirect (through self-construal) effect on social anxiety and that self-construal has a direct effect.

In conclusion, our current results lend support for a model in which personality traits and self-construal play an interactive role in determining social anxiety. We expect the general importance of these relationships will be consistent across cultures, but we also expect that the specific nature of the relationships may differ across cultures. We hypothesized that extraverted individuals in the United States would be more likely to internalize an independent self-construal, but the same process means that an extraverted individual in a non-Western society may internalize interdependent self-construal. Further, higher interdependence might serve as a protective factor in such societies, due to differences in the cultural environment. We encourage future researchers to move towards a more complex view of culture and personality that considers their interplay and how they vary both within and across cultures.

These results may have implications for clinicians if replicated in clinical samples. As demonstrated by Norasakkunkit and Kalick (2009), self-construal can be activated within individuals. If future research continues to support self-construal as an individual difference amenable to change, interventions could focus on self-construal, rather than personality, opening a new avenue of treatment options. We believe that studies like ours underscore that it is important to examine how personality and culture interact in our clients both between and within cultures. These results are consistent with the argument that cultural variables should inform treatment and that clinicians should not assume that individuals who share any given ethnicity will behave in the same manner (Cardemil & Battle, 2003). Instead, individual differences, such as self-construal, should be used to help inform treatment.

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