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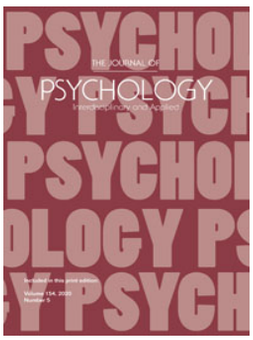

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"Me", "We", and Materialism: Associations between Contingent Self-Worth and Materialistic Values across Cultures

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ABSTRACT

Individuals with high levels of externally contingent self-worth tend to base their self-esteem on factors such as appearance, competitive success, and others' approval. Such tendencies might also elevate people's focus on material possessions. However, cultural moderation of these associations has yet to be explored. A cross-cultural survey among Chinese and Dutch college students examined the link between externally-based contingent self-worth and materialistic values, as well as the mediating roles of need to belong and need for self-enhancement. An initial multi-group path analysis indicated a stronger link between externally contingent self-worth and materialism for Chinese students than for Dutch students. For both Chinese and Dutch students, externally contingent self-worth was positively related to materialistic values, need to belong, and need for self-enhancement. Need to belong and need for self-enhancement were positively linked with materialism, and need to belong and need for self-enhancement mediated the link between externally contingent self-worth and materialism. Though the indirect effect *via* self-enhancement was somewhat stronger among Chinese participants, this research demonstrates that people's externally contingent self-worth might be a factor predicting materialism across cultures, with need to belong and need for self-enhancement playing similar roles as underlying processes in different societies.

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Externally contingent self-worth; need to belong; need for self-enhancement; materialistic values; cross-cultural research

Introduction

Although the pursuit of self-worth is universal, people differ in the sources that form the foundations of their self-worth (Crocker & Knight, 2005). Some base their self-worth more on appearance, others' approval, and competitive success. These individuals are said to have high externally-based contingent self-worth, as these goals are at least partly outside of the individual's control. In contrast, other people base their self-worth more on internal factors, such as virtue. Recently, research conducted in Singapore by Nagpaul and Pang (2017) indicates that these differences in the bases of personal worth might also be connected with the extent to which people pursue materialism. The

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greater peoples' levels of externally contingent self-worth (from now on referred to as external CSW), or the more they base self-worth on external factors, the more materialistic they tend to be.

To date, however, the individual and interpersonal processes that might account for the relationship between external CSW and materialism, and their potential similarities or differences across cultures, have yet to be examined. The current study examined whether the association between external CSW and materialism can be explained *via* fundamental needs for individual self-enhancement and needs for interpersonal belongingness. We further investigated whether the link between external CSW and materialism, as well as the mediating processes, generalize across cultures that differentially emphasize individualism or collectivism in the construction of self-concepts. To this end, we conducted our study in mainland China and The Netherlands, as representing respectively collectivistic and individualistic societies.

Contingencies of Self-Worth and Materialistic Values

Contingencies of self-worth are important determinants of behavior and wellbeing (Crocker & Park, 2004). People set and pursue goals in the domains on which their self-worth is contingent, and regulate their behaviors to achieve the goals that afford them self-worth. Important contingencies identified in former research include appearance, approval from others, competition, academic achievement, family support, God's love, and virtue (Crocker et al., 2003). Appearance, approval from others, and competition can be considered 'external' (e.g. Crocker et al., 2003) because they ultimately rely strongly on others' opinions, standards, or approval. For example, those who base their self-worth on their appearance might feel threatened when receiving negative comments from others about how they look. Similarly, CSW based on approval from others or competition is easily influenced by social feedback.

It is likely that external CSW and an individual's need for social validation are directly related. Indeed, empirical research has found that success and failure in areas that are important for an individual's self-esteem, when compared with performance in other domains, lead to more intense increases or decreases in self-esteem and psychological well-being among those with high external CSW (Crocker, 2002). For example, external CSW evokes behaviors aimed at obtaining others' validation, such as overly emphasizing physical appearance (Crocker et al., 2003; Park & Crocker, 2008), and makes individuals fragile in the face of negative social judgments (e.g. Overstreet & Quinn, 2012). Former research also found differences in external CSW based on demographic factors such as gender, age, and ethnicity (Crocker et al., 2003; Meier et al., 2011). For example, women reported a higher tendency to base their self-worth on others' approval than men (Schwalbe & Staples, 1991), as women are often more motivated toward achieving interpersonal harmony than men (Reid, 2004). Such gender differences further speak to the likelihood that external CSW is highly associated with social approval.

Materialistic values refer to "the importance a person places on possessions and their acquisition as a necessary or desirable form of conduct to reach desired end states, including happiness" (Richins & Dawson, 1992, p. 307), a definition widely adopted in other studies (e.g. Flynn et al., 2016; Jiang et al., 2015; Rindfleisch et al., 2009; Zhang &

Hawk, 2019). High versus low materialistic individuals differ in attitudes and associated behaviors related to the consumption of high-end products. Those who show higher materialistic values have more favorable attitudes toward luxury possessions and products that can be considered helpful for building an ideal self-image (Shrum et al., 2013).

Being more sensitive to interpersonal feedback, individuals high in external CSW might be more influenced by others' consumption attitudes toward purchasing high-end products. They tend to consume products that attract favorable evaluations from others and avoid those that are disliked by others (Netemeyer et al., 1992). Feeling insecure in their personal value (Deci & Ryan, 1995; Roberts et al., 2014), individuals who base their self-worth on external factors also show stronger negative reactions to threats such as uncompetitive personal appearance in social comparison (e.g. Patrick et al., 2004; Zeigler-Hill et al., 2011). Following feelings of threat or insecurity, individuals might elevate their materialism levels because of the short-term comfort that possessions provide. According to studies using samples from Western, individualistic cultures, negative affect temporarily decreases after compulsive buying behaviors (Müller et al., 2012). Moreover, desired possessions can also bring personal security (Christopher et al., 2006), act as a substitute for interpersonal attachment (Norris et al., 2012), bolster self-image (Dittmar & Drury, 2000), and symbolically compensate for or help to regain self-identity (Wattanasuwan, 2005).

Indeed, when certain possessions match individuals' CSW, the possessions are regarded as more important, and the loss of those possessions brings grief (Ferraro et al., 2011). The link between external CSW and materialism might be consistent across individualistic and collectivistic cultures. Studies by Crocker and Luhtanen (2003) and Roberts et al. (2014) both indicated that individuals from the USA with higher external CSW are more likely to engage in impulsive buying and accumulate more credit card debt. Similarly, external CSW was positively linked to materialistic values among adults in Singapore, a collectivistic society, based both on trait measures of external CSW and an experimental induction of high external CSW (Nagpaul & Pang, 2017). By building an attractive appearance or conveying superiority over others, individuals with high external CSW gain a sense of being valuable. To date, however, no research has directly compared the strength of this association between individualistic and collectivist cultures, nor examined potential similarities and differences in underlying processes. The current study, therefore, aims to address this gap in the literature.

In general, our literature review suggests that external CSW is associated with valuing social validation (e.g. Crocker et al., 2003), that material possessions help to gain social approval (e.g. Isaksen & Roper, 2012), and that the link between external CSW and materialism exists across societies differing in individualism-collectivism (Crocker & Luhtanen, 2003; Nagpaul & Pang, 2017; Roberts et al., 2014). However, whether external CSW shows similarly strong associations with materialism across different cultures is still unknown. Understanding cross-cultural similarities and differences in the social factors predicting heightened materialism can assist in the development of culturally-sensitive interventions aiming to reduce materialistic values among youth. For example, knowledge about the extent to which the association between external CSW and materialism differs across cultures will give insight in whether such interventions in Western versus Eastern societies require a differential emphasis on individualistic versus

collectivistic forms of validation, respectively. To our best knowledge, existing studies examining the association between external CSW and materialism have been purely based on samples from one single culture. The current study included participants from both a collectivistic and an individualistic culture in the model, in order to explore potential similarities and differences in the link between external CSW and materialism. We hypothesized that *external CSW is positively related to materialistic values among both Chinese and Dutch participants (H1).*

Interpersonal and Individual Needs Linking External CSW and Materialistic Values

Interpersonal needs for belongingness might be responsible for a link between external CSW and materialistic values. vanDellen et al. (2009) found that people who base their self-worth on external factors show a cognitive tendency to link words related to important domains, such as personal appearance, to a variety of relational outcomes such as social acceptance or rejection. Such a pattern concurs with the claim that individuals with external CSW might be more sensitive to social acceptance and belongingness. Negative interpersonal feedback seems to arouse the motive to engage in social connection. Individuals who base their self-worth on others' approval reported greater desires to appear warm and caring, especially when they hold relatively higher levels of trait self-esteem (Park & Crocker, 2008; Park & Maner, 2009). Meanwhile, individuals might find materialistic behaviors to be an efficient way to fulfill needs for belongingness and social affiliation (Cleveland et al., 2009; Wooten, 2006). Owning possessions valued by the target group could bring social acceptance (Isaksen & Roper, 2012; Mead et al., 2011). Therefore, belongingness needs could potentially explain why individuals with external CSW might be materialistic.

Former studies have also implied that an intrapersonal need for self-enhancement, or a tendency to "maintain and enhance an overall evaluation of the self" (Kitayama et al., 1997), might bridge the link between external CSW and materialistic values. External CSW functions in motivating individuals to approach achievements in domains of high importance. Enhancing the self in these specific domains helps individuals to earn admiration and praise, which could be the overriding goal for those who stake their self-worth on domain-related performance (Crocker et al., 2006). A survey by Collins and Stukas (2008) found that individuals who strongly required external validation, especially those high in narcissism, were more likely to present themselves in a self-enhancing manner. Similarly, in Park and Crocker (2008) research, individuals with higher external CSW were more likely to enhance their physical appearance after receiving negative feedback about how they looked, especially when they were lower in trait self-esteem. In addition, Bergstrom et al. (2009) found that individuals who are more sensitive to discrepancies between their actual and desired appearance showed self-enhancing tendencies by engaging in self-affirmation behaviors after viewing thin models in magazines. Effects of interventions have also demonstrated the salient self-enhancement needs of individuals with high external CSW. Cook et al. (2012) found that, after enhancing perceived worth and integrity by affirming individuals' values such as athletic ability, creativity, and religion, participants became more internally-oriented and less influenced by environmental threats.

Meanwhile, material possessions are capable of fulfilling self-enhancement goals. Material possessions are useful tools for expressing personal financial achievement, high status, and superiority (Kasser, 2003). Prior studies have found positive associations between self-enhancement tendencies and materialism (Karabati & Cemalcilar, 2010), and research has also demonstrated that individuals borrow the symbolic meanings of designer outfits or luxury accessories to facilitate a desired self-image and achieve positive self-regard (e.g. Rucker & Galinsky, 2008). Based on the aforementioned findings, this study proposes that self-enhancement and belongingness might be two important needs linking external CSW and materialistic values. Specifically, we predicted that:

The interpersonal need for belongingness mediates the relation between external CSW and materialistic values (H2); and

The intrapersonal need for self-enhancement mediates the relation between external CSW and materialistic values (H3).

Cross-Cultural Differences in Mediating Processes

The dimension of individualism versus collectivism is one of the primary distinctions that social scientists employ to understand differential cultural contexts (Hofstede, 1980; for systematic reviews, see Taras et al., 2014; Taras et al., 2010; Taras et al., 2009). Markus and Kitayama (1991) examined the differences in people's cognitions, emotions, and motivations between individualistic and collectivistic cultures. In general, people in individualistic cultures focus more on the "self", while those from collectivistic cultures pay more attention to the relationships between the self and others. Such fundamental difference in focus leads to divergence in the dominant needs that individuals experience and express.

Individuals' psychological needs vary between individualistic and collectivistic cultures. In individualistic contexts, compared to collectivistic contexts, members focus more strongly on personal goal pursuit, independence, freedom, and exciting lifestyles as bases both for their own behavioral intentions and standards for social judgment. In contrast, people in collectivistic cultures emphasize belongingness, friendship, family safety, and vertical respect for elders more strongly than people in individualistic cultures (Markus & Kitayama, 1991; Schwartz, 1992; Triandis, 1990). Some prior research has indicated that self-enhancement tendencies are stronger in Western cultures than in Eastern societies (Hampton & Varnum, 2018; Heine et al., 2001; Heine & Hamamura, 2007). Others have instead suggested a pancultural self-enhancement view, arguing that individuals from Eastern societies also tend to enhance the self, but use different tactics of highlighting collectivistic attributes (Sedikides et al., 2003). Despite the interesting nuances provided by the pancultural view, an extensive body of literature, spanning several decades, has supported the cultural-difference view. In the current study, we therefore based our predictions on the cultural-difference view. In addition, belongingness needs or related feelings (e.g. loneliness, see Anderson, 1999) tend to be stronger in collectivistic cultures than in individualistic societies (Lykes & Kemmelmeier, 2014). It is, therefore, possible that individualistic and collectivistic cultures differ in their

concentration on individual self-enhancement versus interpersonal belongingness as source of self-worth maintenance.

Former research suggests that cultural variations in self-worth pursuits can explain consumption preferences in different societies, especially the consumption preferences regarding products that are perceived helpful in communicating personal identity and self-image. In collectivistic cultures, people pay attention to products' abilities to communicate messages about social status, and tend to conform to referent social groups, more than people in individualistic cultures; hence, product choices are more strongly influenced by social norms in collectivistic cultures than in individualistic cultures (Podoshen et al., 2011; Wong & Ahuvia, 1998). However, in individualistic contexts, people tend to use possessions to express personal attitudes and tastes (Wong & Ahuvia, 1998). That is, people in communal societies care more about the social attention, group acceptance, and belongingness that material goods might bring, while people from cultures valuing independence might emphasize the function of possessions to communicate and promote their ideal self-image as a means of enhancing the self.

We followed the citizenship approach used in former cross-cultural research (e.g. Hofstede, 1980; Zhou et al., 2012), taking participants who were born and raised in specific contexts as representative examples of different cultural orientations. Specifically, this study examined Chinese and Dutch college students as representative of collectivistic and individualistic cultures, respectively (for similar comparisons, see Chen et al., 2019; Huwaë & Schaafsma, 2018; Hofstede et al., 2005). Given the distinctive importance of belongingness and self-enhancement needs in each culture, it is quite possible that individuals with higher external CSW in collectivistic cultures might experience stronger belongingness needs, and are more likely to pursue materialism out of such needs, than their counterparts in individualistic cultures. Meanwhile, people with higher external CSW in individualistic cultures might experience stronger self-enhancement needs, and pursue materialism out of such needs, than those in collectivistic cultures. This study therefore hypothesized that:

> The positive relation between external CSW and materialistic values will be mediated more strongly by the need to belong for Chinese participants than for Dutch participants (H4);
>
> The positive relation between external CSW and materialistic values will be mediated more strongly by the need for self-enhancement for Dutch participants than for Chinese participants (H5).

Overview of the Study

We tested the aforementioned hypotheses (H1 to H5) using a cross-cultural survey with Chinese and Dutch college students. We propose a model linking external CSW, need to belong, need for self-enhancement, and materialistic values. Considering that prior research has reported mixed results regarding gender, age, and socioeconomic status (SES) differences in materialism or related buying behaviors (e.g. Chaplin & John, 2007; Dittmar, 2005; Dittmar et al., 2014; Roberts & Tanner, 2000; Segal & Podoshen, 2013), the current study controlled for these demographic variables while examining links between the constructs of interest.

Methods

Participants

A total of 394 Chinese college students and 192 Dutch college students participated in the study. Both groups of students were orally invited to participate in in one of their classes, making clear that participation was appreciated yet voluntary (i.e. no course completion depended on it, nor would the students receive extra credit). The Chinese students were recruited from a university in Zhuhai, China. The Dutch students were recruited from two universities in Utrecht and Rotterdam, The Netherlands. We matched the grade of the participants so that most of them were sophomore or junior. All the students completed the study online through a survey link. Among them, 17 Dutch students were removed because they did not finish the survey. In total, the data of 394 Chinese participants (78.4% female, $M_{age} = 20.63 \pm 1.07$) and 175 Dutch participants (81.0% female, with one did not report gender, $M_{age} = 20.03 \pm 1.70$) remained and entered data analysis. The data were collected using two popular online data collection platforms with similar features: Sojump in China, and Qualtrics in The Netherlands. The instructions of the questionnaire explained that the study aimed to increase knowledge about college students' lives, and no specific personal information would be included in data analysis or in any report. The study was approved by ethical committees in both countries.

Measures

As all the measures used in this study were originally developed in English, we made every effort to ensure the cross-cultural equivalence of our scales by applying rigorous translation and back-translation procedures by experienced researchers who are fluent in English and Mandarin and in English and Dutch.

Contingent Self-Worth

We used the Contingencies of Self-Worth Scale for college students (CSWS, Crocker et al., 2003) to measure contingent self-worth. Specifically, we chose three subscales that focused on external factors including approval from others, appearance, and competition. There were five items included for each aspect. An example item for each respective subscale was "My self-esteem depends on the opinions others hold of me", "When I think I look attractive, I feel good about myself", and "Doing better than others gives me a sense of self-respect." Participants responded to each item on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*). One item from competition ("My self-worth is influenced by how well I do on competitive tasks") and another one from others' approval ("I can't respect myself if others don't respect me") were removed because they contributed to a large amount of measurement variation in the scale between the Chinese and Dutch groups. Following the methods used in prior research (cf. Paradise & Kernis, 1999; Roberts et al., 2014), we calculated the mean score of the three subscales as a general indicator of external CSW, as we focus on the general extent to which individuals base their self-worth on external factors rather than the influence from a specific domain. The Cronbach's alpha for the total scale was .81 for Chinese

participants, and .84 for Dutch participants in this study. These reliability coefficients were similar to the scores for Asian and White Americans ($\alpha > .77$) reported in Crocker et al. (2003) original research.

Need to Belong

The 10-item Need to Belong Scale (Leary et al., 2013) measured belongingness needs on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*). One item ("I try hard not to do things that will make other people avoid or reject me") was not included in data analysis because of relatively low item-total correlation (i.e. $< .28$ while all others were $> .50$) for the Chinese group, and therefore nine items were included for this measure for both subsamples. Sample items are "My feelings are easily hurt when I feel that others do not accept me" and "I want other people to accept me." Earlier studies showed this scale to be reliable, with alpha's ranging between .78 and .87 using samples from Mturk (Leary et al., 2013). In the current study, the scale obtained a Cronbach's alpha of .84 among Chinese participants and of .80 among Dutch participants.

Need for Self-Enhancement

Need for self-enhancement was measured by the four-item scale from Schwartz (1992). The scale reflects individuals' desire to self-enhance by gaining power and achievement. We changed the subject from "He", used in the original scale, into "Person A" to avoid a potential influence from the participants' gender. Sample item are "It is important to Person A to show A's abilities. Person A wants people to admire what A does" and "Being very successful is important to Person A. Person A hopes people will recognize A's achievements." Participants reported to what extent they were like "Person A" rated on a scale from "*not like me at all*" to "*very much like me*". A seven-point scale was used for Chinese participants, and a six-point scale was used for Dutch participants (due to a programing error). The scales used for the two samples were both continuous, and had the same endpoint labels. Therefore, ratio scores were calculated by dividing the individuals' scores by seven for Chinese participants and by six for Dutch participants before further data analysis. For both groups, a higher scale score indicates a higher need for self-enhancement. The Cronbach's alpha was .78 for the Chinese sample and.75 for the Dutch sample, which were similar to the reliabilities presented in former research (e.g. Karabati & Cemalcilar, 2010; reporting subscales' alphas between .75 and .80).

Materialistic Values

The Materialistic Values Scale (nine-item version) from Richins (2004) measured materialistic values on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*). One item ("I try to keep my life simple, as far as possessions are concerned") was removed because of relatively low item-total correlation for both Chinese and Dutch samples (i.e. $< .24$), and we therefore included eight items in data analysis. Sample items are "The things I own say a lot about how well I'm doing in life" and "I'd be happier if I could afford to buy more things." The Cronbach's alpha was .82 for Chinese participants, and

.81 for Dutch participants in this study, which were very similar to the score of .84 in Richins (2004) original research.

Demographic Information

Demographic variables included the continuous variable age, the dichotomous variable gender (0 = female; 1 = male), and subjective social status. Similar to previous cross-cultural studies (e.g. Adler et al., 2000; Goodman et al., 2001), subjective social status was measured by an abstract ladder with 10 rungs (1 = *the lowest*, 10 = *the highest*). A subjective indicator of socioeconomic status is preferable to an objective one for cross-cultural or health-related studies, because a subjective measure is defined in terms of one's place in the specific society in which they are embedded, and avoids the potential bias caused by the differences in economic development between societies (Park et al., 2013). The instruction in this study was: "*Suppose there is a ladder representing where people stand in your society. At the top (level 10) are the people who are best off - those who have the most money, the most education and the most respected jobs. At the bottom (level 1) are the people who are the worst off - who have the least money, least education, and the least respected jobs or no job. The higher up you are on the ladder, the closer you are to the people at the very top; Where would you place yourself on this ladder from 1 (worst) to 10 (best)?*" Age, gender, and subjective social status were all included as control variables in our model.

Results

Assessment of Measurement Equivalence

Before the main data analyses, we conducted a preliminary set of tests to evaluate the comparability of the measures between the two samples through structural equation modeling (SEM). First, we examined latent construct of each measure based on its items as we aimed to include the mean of each measure as a manifest variable in our final model. In these analyses, we constrained the factor loadings of each item to be equal between groups – instructing the model to calculate an equivalent factor loading for each group. Because the model fits for the four measures were not sufficient, we then used the alignment method and adopted the standard set by Asparouhov and Muthén (2014) who suggested that measurement invariance can be assumed for a measure with 25% or fewer of the parameters varying between two groups. This method yields a well-fitting model in multi-group studies (Van De Schoot et al., 2013). We further deleted two items from the CSW scale and one item from the need to belong scale, which caused the biggest measurement variation between the two groups according to this test. After removal of those items, a one-latent-variable model for each measure indicated that 19.23% of the items of externally contingent self-worth lacked invariance, 22.22% of need to belong, 0% of need for self-enhancement, and 25% of materialistic values. Thus, measurement equivalence between two samples could be assumed for all the measures in this study.

Main Data Analysis and Model Testing

The main data analysis included two parts: initial group comparison on each variable using SPSS 19.0 and path analysis using Mplus 7.4 (Muthén & Muthén, 1998). For the initial group comparisons, independent samples *t*-tests were used to check mean differences on each measure between the two groups. For the hypothesis testing, the study used multi-group path models to examine the equivalence of relevant links between Chinese and Dutch groups after standardizing the scores of the variables within each group. Considering the unequal numbers of items for the three domains of external CSW were not equal, we standardized the mean domain scores before calculating a mean score for external CSW, and standardized them before model testing.

In Stage 1 of the hypothesis testing, we tested H1, the relation between external CSW and materialistic values, with every variable being controlled for age, gender, and SES in both groups. Stage 2 added need to belong and need for self-enhancement as mediators to the model, with each variable being controlled for demographic variables. Before testing this model, we first trimmed the links from the control variables that showed no effect for either group. In Stage 3 we tested H2 and H4 based on the model fit change when sequentially constraining the link between external CSW and need to belong, and the link between need to belong and materialistic values to be equal between the two groups. In Stage 4, we tested H3 and H5 by first constraining the link between external CSW and need for self-enhancement between the two groups, and then the link between need for self-enhancement and materialistic values. A significantly decreased model fit compared to the model in the prior stage indicates different effect strengths between the two samples. Bootstrapping (10,000 resamples) was used to examine indirect effects. Acceptable fit for models was set at CFI $\geq$ 0.90, and RMSEA and SRMR $\leq$ 0.08 (Kline, 2010).

Initial Group Comparisons and Intercorrelations

The means, standard deviations, and correlations between variables for Chinese and Dutch participants are presented in Table 1. The comparison on gender distribution ($Z = .70$, $p = .480$) indicated no difference between groups. Although Dutch participants ($M = 20.03 \pm 1.70$) were slightly younger than Chinese participants ($M = 20.63 \pm 1.07$), t (237.50) = 4.28, $p < .01$, the mean age distance is relatively small. In addition, the results of independent samples *t*-tests indicated that the Chinese sample scored higher than the Dutch sample on materialistic values, t (567) = 10.48, $p < .001$, need to belong, t (567) = 2.47, $p = .014$, and need for self-enhancement, t (567) = 6.42, $p < .001$, but not on external CSW, t (567) = 1.33, $p = .183$.

The correlations between the standardized variables showed that all variables were significantly and positively associated with each other for the Chinese sample (i.e. $p \leq .01$). The correlation coefficients were of moderate strength ($\geq .36$), implying that these constructs were closely linked with each other among Chinese participants. The correlations were also significant for the Dutch sample, except for the correlation between the need to belong and self-enhancement ($r = .02$, $p = .768$), and the correlation between the need to belong and materialistic values ($r = .14$, $p = .068$). Moreover, overall, the

Table 1. Initial Group Comparisons and Correlations between Variables for Chinese and Dutch Participants.

	Chinese	Dutch	Difference tests	External CSW	NB	NSE
Age	20.63 ± 1.07	20.03 ± 1.70	t (237.50) = 4.28***			
Gender (female)	78.4%	81%	Z = 0.71			
SES	6.35 ± 1.35	7.17 ± 1.15	t (567) = 7.00***			
External CSW	4.87 ± 0.72	4.78 ± 0.81	t (567) = 1.33			
NB	4.90 ± 0.94	4.69 ± 0.95	t (567) = 2.47*	.65***/.63***		
NSE	.69 ± 0.17	.59 ± 0.15	t (567) = 6.42**	.43***/.22**	.36***/.02	
M	4.68 ± 0.97	3.75 ± 1.00	t (567) = 10.48***	.49***/.22**	.43***/.14	.56***/.40***

Note: The numbers indicate correlations between variables for Chinese and Dutch samples, respectively; External CSW = Externally contingent self-worth; NB = Need to belong; NSE = Need for self-enhancement; M = materialistic values.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

absolute correlation coefficients were somewhat smaller for Dutch participants than for Chinese participants.

Hypothesis Testing of Chinese and Dutch Comparisons

Stage 1: Hypothesis Test of H1

In Stage 1, we tested a completely unconstrained, basic model (**M0**) using multi-group analysis to examine whether, as proposed in H1, external CSW was linked to materialistic values for the Chinese and Dutch samples. The results indicated that external CSW showed a significant link with materialistic values for both Chinese (B = .49, SE = .05, p < .001) and Dutch participants (B = .25, SE = .07, p < .001). The model fit was $\chi^2(0)$ = 0.00, p < .001; CFI = 1.00, RMSEA = .00, 90%CI = .00 - .00, SRMR = .00, and constraining the link decreased the model fit significantly, $\triangle\chi^2$ = 7.80, $\triangle df$ = 1, p = .005. The results supported H1, and additionally indicated a stronger direct link from external CSW to materialistic values for the Chinese sample than for the Dutch participants.

Stage 2: Basic Model Building for Follow-up Hypothesis Tests

We first built a fully saturated free model ($\chi^2(0)$ = 0.00, p < .001; CFI = 1.00, RMSEA = .00, 90%CI = .00 - .00, SRMR = .00), in which need to belong and need for self-enhancement were both included as mediators, and gender, age, and SES were included as control variables. The non-significant links with control variables were then trimmed from the model (**M1**: $\chi^2(14)$ = 10.28, p = .742; CFI = 1.00, RMSEA = .00, 90%CI = .00 - .04, SRMR = .02).

We further tested differences in the correlation between need to belong and need for self-enhancement for the two groups by constraining the correlations. The model fit worsened upon implementing the constraint, $\triangle\chi^2$ = 7.30, $\triangle df$ = 1, p = .007, indicating that the correlation between need to belong and need for self-enhancement was different between Chinese and Dutch samples, and therefore should be left unconstrained in the model.

Stage 3: Hypothesis Test of H2 and H4

To test the role of need to belong as proposed in H2 and H4, we constrained the link between external CSW and need to belong, and that between need to belong and materialistic values. The model fit was not significantly worse when constraining only the link between external CSW and need to belong ($\triangle\chi^2 = 0.50$, $\triangle df = 1$, $p = .481$), or only the link between need to belong and materialistic values ($\triangle\chi^2 = 0.59$, $\triangle df = 1$, $p = .443$), or both links at once (**M2**: $\triangle\chi^2 = 1.\ 08$, $\triangle df = 2$, $p = .582$). Therefore, these two links were of equivalent strength for the Chinese and Dutch groups, and the respective model constraints were retained, namely H2 was accepted while H4 was not.

Stage 4: Hypothesis Test of H3 and H5

To test H3 and H5, we constrained the link between external CSW and need for self-enhancement, and the link between need for self-enhancement and materialistic values based on the model in Stage 2. The model fit significantly worsened when only constraining the link between external CSW and need for self-enhancement ($\triangle\chi^2 = 4.22$, $\triangle df = 1$, $p = .040$), but not when only constraining the link between need for self-enhancement and materialistic values (**M3**: $\triangle\chi^2 = 0.21$, $\triangle df = 1$, $p = .650$). In this case, the path from external CSW to self-enhancement needs was allowed to vary between groups, while the constraint on the path from self-enhancement needs to materialistic values was retained.

Final Model

Based on the results from Stage 1 to Stage 4, we constrained the path linking external CSW to need to belong, the path linking need to belong to materialistic values, and the path linking need for self-enhancement to materialistic values, but allowed other paths in the model to vary between the groups in order to describe relevant group differences below. The model fit was acceptable (**M4**: $\chi^2(17) = 11.50$, $p = .829$; CFI = 1.00, RMSEA = .00, 90%CI = .00 - .03, SRMR = .02, and did not decrease compared to the unconstrained, control-variable-trimmed model (i.e. **M1**) in Stage 2, $\triangle\chi^2 = 1.23$, $\triangle df = 3$, $p = .746$. As a sensitivity analysis, we again tested group differences in the external CSW-materialism link in this final model. The model fit worsened when the link was constrained, $\triangle\chi^2 = 5.31$, $\triangle df = 1$, $p = .021$. Therefore, we built the final model based on the test of H1 to H5, in which the link between external CSW and materialistic values, the link between need to belong and need for self-enhancement, and that between external CSW and need for self-enhancement were unconstrained. The model is presented in Figure 1.

In this final model, external CSW showed significant links with need to belong ($B = .62$, $SE = .04$, $p < .001$) for both Chinese and Dutch participants, yet external CSW showed a stronger association with materialistic values for Chinese participants ($B = .23$, $SE = .05$, $p < .001$), compared to Dutch participants ($B = .05$, $SE = .08$, $p = .535$). External CSW was also more strongly associated with need for self-enhancement for Chinese participants ($B = .44$, $SE = .05$, $p < .001$), compared to Dutch participants ($B = .26$, $SE = .08$, $p = .001$), although the path for both groups was significant. Need to belong ($B = .12$, $SE = .05$, $p = .018$) and need for self-enhancement ($B = .41$, $SE = .04$, $p < .001$) were also linked with materialistic values for both groups. In addition, the relation between the need to belong and self-enhancement was stronger for Chinese

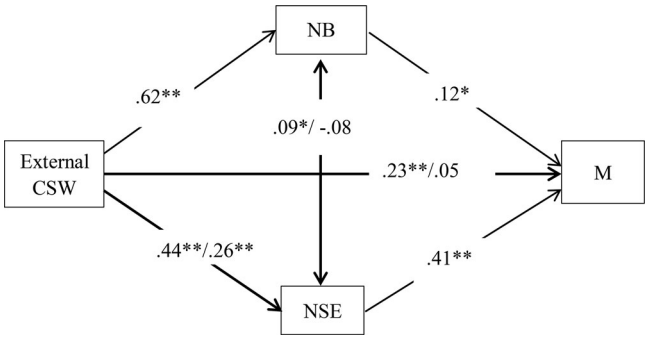

Figure 1. The final multi-group model of the study. *Notes*: $^{\dagger}p < .07$, $^{*}p < .05$, $^{**}p < .01$. Coefficients represent standardized values for Chinese and Dutch samples, respectively; Bold lines represent the paths left unconstrained between the two groups; External CSW = External contingent self-worth; NB = Need to belong; NSE = Need for self-enhancement; M = materialistic values;
Model fit:
$\chi 2(17) = 11.50$, $p = .829$; CFI = 1.00, RMSEA = .00, 90%CI = .00 - .03, SRMR = .02;
Control variables:
Gender→CSW: -.40**/-.50*; SES→CSW: -.14*/.07;
Gender→NB: -.19†/-.53**; Gender→NSE: .23†/.51*;
Age→M: -.04/-.13†
Standardized indirect effects:
CSW → NB→ M: .08*/.08*; CSW → NSE → M: .18**/ .11**

participants ($B = .09$, $SE = .04$, $p = .029$) compared to Dutch participants ($B = -.08$, $SE = .06$, $p = .154$).

Based on the model from Stage 4, we tested whether the indirect effects of need to belong and need for self-enhancement were significant for each group. The results indicated that for Chinese and Dutch participants, both need to belong and need for self-enhancement showed significant and positive indirect effects in the link between external CSW and materialistic values. For need to belong, the indirect effect was equivalent between the two groups ($\beta = .08$, 90%CI = .02-.13, $p = .018$). For need for self-enhancement, however, the indirect effect was significantly stronger for Chinese participants ($\beta = .18$, 90%CI = .13-.23, $p < .001$) than for Dutch participants ($\beta = .11$, 90%CI = .05-.16, $p = .001$), Wald test = 4.23, df = 1, $p = .040$, which showed H3 as being acceptable but not H5. Hence, external CSW linked to materialistic values both through need to belong and need for self-enhancement among both Chinese and Dutch participants, with the indirect effect of need to belong being equivalent between groups but the indirect effect of need for self-enhancement being stronger for Chinese participants.

General Discussion

The current research tested whether external CSW was positively associated with materialism (H1) *via* the dual underlying processes of need to belong (H2) and need for self-enhancement (H3). Moreover, we tested whether the mediating effect of need to belong would be stronger among Chinese participants (H4), and whether that of need

for self-enhancement would be stronger among Dutch participants (H5). While the results showed partial support for our hypotheses, there were also surprising findings indicating culturally consistent, but strength-varied, indirect associations. These unexpected findings have important implications of our understanding of the motivational processes that underlie materialistic values.

Our multi-group model indeed found a positive link between external CSW and materialism through both need to belong and need for self-enhancement. However, we only found a cultural difference regarding the indirect effect of need for self-enhancement, which was unexpectedly stronger for Chinese participants than for Dutch participants. In addition to our hypotheses, we also found the direct association between CSW and materialism to be stronger for Chinese participants than for Dutch participants. Furthermore, there was a positive correlation between belongingness and self-enhancement needs among Chinese participants, but not among Dutch participants. In general, the study supported the link between external CSW and materialism, and the mediating roles of both intrapersonal and interpersonal needs underlying this process across cultures. However, the cultural differences actually found in our results were not entirely consistent with our expectations, and therefore require further consideration.

Links between External CSW, Needs, and Materialistic Values across Cultures

Associations between External CSW and Materialistic Values

Prior research studying materialism from a psychosocial perspective has consistently demonstrated that threats to self-esteem, such as unsatisfactory performance in tasks, sense of insecurity, and social exclusion, contribute to elevated materialistic values (Jiang et al., 2015; Mead et al., 2011; Park & John, 2011). This study, however, suggests that not only the level of self-esteem but also its source explains differences in materialism. Namely, the more individuals rely on external factors for maintaining self-worth, the more likely that they endorse materialistic values. This result held for individuals in both China and The Netherlands, albeit stronger for Chinese individuals. Highly materialistic individuals utilize personal possessions as tools to maintain positive self-perceptions (Shrum et al., 2013). They try to "buy" high personal status (Rucker & Galinsky, 2008), attractiveness (Chaplin & John, 2007), and friendship (Isaksen & Roper, 2012; Jiang et al., 2015; Mead et al., 2011). These benefits help to explain why individuals from both cultures adopt materialism when they base their self-worth on external factors.

Needs Mediating the Association between External CSW and Materialistic Values

The mediating effect of need to belong for both Chinese and Dutch participants implies that, across cultures, materialism might be adopted as a tool to earn social capital. This finding is in line with previous research showing that social needs, such as being accepted by others, play an important role in people's purchasing behaviors under both individualistic and collectivistic contexts (e.g. Isaksen & Roper, 2012; Kim et al., 2002). Social consumption motivations are observed in both individualist and collectivist societies and among both adolescents and adults (Chan & Prendergast, 2008; Heaney et al., 2005). Along with using high-end products to earn others' approval and acceptance,

conforming to others' consumption behaviors can be a strategy to fulfill needs for belongingness (DeMotta et al., 2013; La Ferle & Chan, 2008). Individuals from both types of societies adopt material possessions to gain social acceptance. Mead et al. (2011) found an affiliation-serving consumption strategy after social exclusion among Western participants. Bruggeman (2014) also found that fashionable possessions are used to construct social identity among Dutch people. As for collectivistic individuals, Jiang and colleagues (Jiang et al., 2015) found an increase in materialism among Chinese youth after social rejection, implying a desire to re-gain social connections through materialistic behaviors. Supporting these earlier findings, the current study further demonstrated an equivalent association between need to belong and materialism between the two cultures.

The study also supported the role of need for self-enhancement, for both groups, in the link between external CSW and materialism. When individuals stake their self-worth in a specific domain, enhancing the self in related aspects is one of their primary goals. Chaplin and John (2007) suggested that individuals might be triggered to focus on material goods primarily as a means of self-enhancement after entering adolescence. This might be because material possessions are one of the most direct and efficient ways to communicate one's superiority. The direct relationship between self-enhancement and materialism has been consistently supported by prior research (Karabati & Cemalcilar, 2010; Kilbourne et al., 2005; Kilbourne & LaForge, 2010). In line with these previous findings, our results indicate that the need for self-enhancement is an especially strong positive predictor of materialism.

Cultural Differences in the Direct and Indirect Effects

The most notable cultural differences in this study were the stronger direct association between external CSW and materialism among Chinese participants, and the stronger indirect effect of self-enhancement among Chinese participants due to the stronger link between external CSW and need for self-enhancement. The link between external CSW and materialism was fully mediated by the two types of needs for Dutch participants, but only partially mediated for Chinese participants. The findings suggest the necessity of investigating alternative explanations that account for the persistent, direct link between external CSW and materialism for Chinese participants. One potential explanation involves both the high level of materialism in contemporary Chinese society and individuals' collective motives. According to a recent report from Bain & Company Inc (2017), the Worldwide Luxury Market Monitor, China is one of the most materialistic societies in the world, currently accounting for one-third of luxury consumption per year with an increase of 6-8% per year. This suggests that materialistic behavior is currently a strong norm in Chinese society. Individuals in collectivistic societies are more likely to obey social norms (Markus & Kitayama, 1991), in order to earn social acceptance and to avoid potential social judgment or punishment. Individuals with high external CSW in such a context are very likely to show higher materialistic values when compared to those in Dutch culture.

As previously stated, the indirect effect of belongingness needs was equivalent between the two samples, in contrast to our expectations, and the indirect effect of self-enhancement needs was stronger among Chinese participants. Chinese individuals

reported higher mean scores of belongingness needs, but the two groups did not differ in the strength of effects from external CSW to belongingness needs, or from belongingness needs to materialism. In contrast, Chinese participants' external CSW predicted self-enhancement needs more strongly than did Dutch participants' external CSW; this stronger association between CSW and self-enhancement needs for Chinese participants resulted in a more substantial indirect effect from CSW to materialism, *via* self-enhancement, for participants from a collectivistic cultural background.

The positive link between belongingness and self-enhancement needs for Chinese participants, which was not significant for Dutch participants, suggests a stronger connection between enhancing the self and fostering or strengthening interpersonal relationships in collectivistic cultures. In this case, self-enhancement could be more important to Chinese participants' social goal of gaining others' approval. Such cultural differences might help to explain why people in collectivist cultures purchase more luxury products as gifts for friends and close others than people in individualist cultures (Wong & Ahuvia, 1998). The positive link between belongingness and self-enhancement needs for Chinese participants implies that self-enhancement might not be a purely individualistic motive, but could also be taken as a strategy to achieve interpersonal goals within a collectivistic context. Alternatively, in line with the pancultural self-enhancement view of Sedikides et al. (2003), self-enhancement in collectivistic cultures might be more about collectivistic attributes. Such an orientation might contribute to the finding that external CSW predicted self-enhancement needs more strongly for Chinese participants, which further predicted elevated materialistic values for these individuals.

Cross-Cultural Comparison of External CSW, Need to Belong, Need for Self-Enhancement, and Materialistic Values

There was a trend for Chinese participants to report higher levels of external CSW than Dutch participants. Chinese participants also experienced stronger interpersonal belongingness needs than Dutch participants. These findings are in line with established cultural differences in the member-group relationship. Collectivistic cultures emphasize interpersonal relationships and group harmony (Markus & Kitayama, 1991). Members might pay more attention to others' opinions about them and whether they are accepted by their social groups, holding a stronger relational self-identity, while members of individualistic societies care more about expressing their uniqueness, and hold an individual self-identity (Bedford & Hwang, 2003). Therefore, it is reasonable that people in collectivistic cultures, compared to their individualistic counterparts, are more likely to be afraid of being disagreed with, disregarded, or disliked. This increased focus on others' evaluations leads individuals from collectivistic cultures to vary more strongly in their self-evaluations (Heine & Buchtel, 2009). Still, despite the stronger need to belong among Chinese participants, we found a nonsignificant trend for higher levels of external CSW in this group (for different findings, see Liu et al., 2017).

In contrast to our mediation hypothesis, Chinese participants reported higher mean levels of self-enhancement than Dutch participants. Considering the positive link between self-enhancement and need to belong among Chinese participants, our results

appear to align with a pancultural view of self-enhancement (Sedikides et al., 2003). As demonstrated by our finding that self-enhancement mediated the link between external CSW and materialism for Chinese participants, it seems that individuals in collectivistic contexts do experience the need to enhance the self, although they may experience these needs differently from those in individualistic cultures by conflating them more strongly with interpersonal needs. This finding stands in contrast to Heine and Hamamura (2007) advocacy of cross-cultural differences, based on meta-analytic evidence suggesting that East Asians do not engage in self-enhancement except when comparing themselves to a hypothetical "average" person (i.e. the "Better Than Average" effect).

One of the key conceptual distinctions between the pancultural view (Sedikides et al., 2003) and the cultural difference view (Heine, 2005) lies in the pancultural view's argument that self-enhancement is a universal human motivation. Findings of this research actually indicated need for self-enhancement as a mediator between external CSW and materialism among both groups. Self-enhancement can be considered a strategy that individuals use to fit into their contexts (Sedikides et al., 2003). From this perspective, collectivists are likely to enhance attributes that are important for in-groups or their community. Considering the positive link between need to belong and need for self-enhancement among Chinese participants, self-enhancement might be a universal motivation, even if the interpretation and the forms of self-enhancement are influenced by culture. Additionally, a closer examination of the self-enhancement need scale used in this study points to a strong focus on achievement motivation. Former research indicates that Chinese students reported higher levels of achievement motivation (Salili, 1996), academic buoyancy, and adaptability (Martin et al., 2016), compared to individuals from Great Britain or the United States. Both of these reasons might account for the relatively higher level of self-enhancement needs among Chinese participants.

Considering we did not measure participants' individual self-construals, it is also possible that Chinese youth are currently undergoing a shift toward individualism. In a study comparing individualism-collectivism in the United States and Japan, Hamamura (2012) indicated that some indices revealed stronger individualistic tendencies among Japanese people in recent decades, potentially as a consequence of economic growth (Inkeles, 1975). Contemporary Chinese youth could similarly be adopting more individualistic self-construals as a result of recent economic developments. Such a possibility might further contribute to the higher levels of self-enhancement that Chinese participants reported in this study. Future studies might directly measure self-construal to further examine this interpretation.

Our study also found higher materialistic values among Chinese students than among Dutch students. This is consistent with prior findings showing greater materialism among Chinese young adult consumers than their more individualistic American counterparts (e.g. Podoshen et al., 2011). This result seems contradictory to former claims that materialism is self-centered and represents a more western lifestyle, or that materialistic values are incompatible with collectivist values (Awanis et al., 2016; Burroughs & Rindfleisch, 2002; Schwartz, 1992). We argue that, on a national level, materialistic values could result from various factors apart from cultural values of collectivism-individualism. When comparing materialism levels between nations, it is important to consider a variety of economic, cultural, and social factors. For instance, rapid economic

growth might lead to value transformations toward materialism in developing countries such as China, India, and Brazil, but could move developed countries toward "post-materialistic" values, in which individual improvement, human rights, and environmental protection are emphasized (Inglehart et al., 1998; cf. Zhou, 2009). The strong economic growth in China might account for the high materialism across the nation, regardless of its collectivist orientation. In the context of rapid economic growth, many people desire to join a higher socioeconomic class by utilizing the symbolic meaning of high-end material products. Through materialism-related behaviors, individuals present themselves as being superior to others and having attained a higher social rank (Dubois & Ordabayeva, 2015; Kim & Jang, 2017).

Strengths, Limitations, and Future Directions

This study holds several methodological strengths. First, this is a cross-cultural study that included participants from both collectivistic and individualistic cultures. It extends prior studies that were either implemented in collectivistic (Nagpaul & Pang, 2017) or individualistic contexts (Roberts et al., 2014), by replicating the CSW-materialism link across cultures and examining potential cultural moderation of underlying processes. Second, participants from both cultures were matched in terms of educational level, gender distribution, and age, accounting for a reliable comparison. Balancing the demographic factors is important in examining culture's influence, especially when their effects are found in former studies.

The study does have limitations that have implications for the interpretation of the results and the design of future studies. First, the sample sizes from the two cultures were not equal, with the Dutch sample being smaller. A more closely matched number of participants from each culture would be preferable in order to avoid potential estimation bias on coefficients. Second, the findings of the current study are based on a correlational design, and therefore cannot speak to causal effects between the constructs. Future studies including lab experiments that prime external CSW (e.g. Nagpaul & Pang, 2017) would help to establish its causal effects on materialistic values, and the role of the two mediators. Third, both sub-samples consisted of college students, and the generalization of our findings to other groups (including other young adult groups) across the two cultures would require further study. In addition, the study focused on self-reported materialistic values, but did not include any objective indicators. Future studies might include variables such as the amount of high-end spending, product consumption, or credit card debt as objective indicators of materialism, which could provide stronger support for our results.

Conclusions

Self-worth is a fundamental issue for all individuals, but how people build their self-worth might depend on the contexts in which they are embedded, particularly in terms of emphases on uniqueness or interdependence. The way people construct a sense of personal value determines their lifestyle choices. This study demonstrated a positive link between external contingencies of self-worth and materialistic values for both Chinese

and Dutch young adults. Interpersonal need to belong and individual need for self-enhancement accounted for this association among both groups, although a direct association persisted for the Chinese group even after including these mediators. The equivalent indirect effect of need to belong and a stronger effect of need for self-enhancement among Chinese participants uncovered a culturally consistent, but strength-varied relation between external CSW and materialistic values. Our research provides empirical evidence supporting the notion that how people define their self-worth substantially accounts for their attitudes and values toward material possessions. The nuanced differences in the underlying processes between groups suggest that culture might subtly shape the underlying needs that drive attitudes toward material goods in the service of self-worth.

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