RESEARCH PAPER

Does Materialism Hinder Relational Well-Being? The Role of Culture and Social Motives

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Abstract
Materialism has often been pitted against relational well-being. However, it is unclear if such a negative relationship exists in East Asian cultures where personal goals and values tend to be shaped by social motives. In three studies, we tested the association between materialism and relational well-being across multiple individualistic and collectivistic cultures and further studied the role of social motives for materialism. In Study 1a, materialism predicted relational well-being negatively in the US but not in Japan. In Study 1b, we replicated the findings of Study 1a with Chinese and the US adults showing that materialism predicted relational well-being differently between the two cultures. Lastly in Study 2, Chinese reported higher social motives for materialism than European Americans, and such difference explained cultural moderation of the link between materialism and relational well-being. The studies suggest that cultural contexts and social motives play important roles in relational well-being of materialistic individuals.

Keywords Materialism · Relational well-being · Culture · Social motives

1 Introduction

A certain amount of income and material goods are necessary for anyone to sustain living. However, there is great variance in the extent to which people value money and material goods. The term "materialism" refers to the tendency to place great importance on acquiring wealth and material possessions (Kasser and Ryan 1993; Richins and Dawson 1992; Sirgy 1998). Scholarly literature from various disciplines collectively suggests that materialism is inherently self-centered and conflicts with other-centered values, thereby having

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a negative effect on social relationships (Kasser and Ryan 1993; Maio et al. 2009; Richins and Dawson 1992; Roberts et al. 2015; Ryan and Dziurawiec 2001). In line with this reasoning, materialism has been linked to other negative social outcomes, such as relational dissatisfaction and loneliness, in studies that focus specifically on Western cultures (Bauer et al. 2012; Christopher et al. 2004; Nickerson et al. 2003; Pieters 2013; Richins and Dawson 1992).

While many cultures beyond Western ones have experienced a surge of materialism accompanied by industrialization (Ger and Belk 1996), an understanding of cultural contexts has been largely neglected in previous research on the link between materialism and social relationships. Importantly, some cultures exhibit substantially different attitudes about social orientation (i.e., how the self and others are related; Markus and Kitayama 1991; Triandis 1989). In individualistic cultures such as those of North America, the self is defined by its internal attributes and viewed as an independent entity distinct from others, whereas the self is defined within its social relationships with others in East Asian countries (i.e., Korea, Japan, China; Bochner 1994; Markus and Kitayama 1991). These cultural differences in social orientation suggest that conceptualizing materialism as being exclusively self-centered (and not other-centered) may not be applicable to East Asian cultures where personal goals and values often encompass others (Hamedani et al. 2013; Iyengar and Lepper 1999). The current study aims to test whether the association between materialism and relational well-being, conceptualized as one's perception of the quality of the relations with others, depends on cultural contexts that may differ according to one's social orientation toward materialistic goals. Given the importance of social relationships in the psychological as well as the physical health of human beings (Cohen et al. 2001; Diener and Seligman 2002; House et al. 1982; Myers and Diener 1995; Reis et al. 2000), it is critical to understand how cultural contexts shape the association between materialism and well-being in a social domain.

1.1 Materialism Versus Relational Well-being

Materialism, although has been conceptualized in multiple ways, is generally defined as the importance ascribed to acquiring and owning material goods. Materialism has been found to have detrimental effects on relational well-being (Dittmar et al. 2014) because it leads to the pursuit of external sources of worth (e.g., financial success, social image, fame) that do not directly fulfill intrinsic needs for social affiliation and communal feelings (Deci and Ryan 2000). Although people may seek others' approval through the acquisition of money and possessions, the approval of others may become an extrinsic reward that ultimately hampers intrinsic needs for social affiliation (Deci and Ryan 2000; Kasser and Ryan 1993). Moreover, materialism may suppress social engagement by crowding out other-centered values such as family cohesion, social responsibilities, and concern for others (Burroughs and Rindfleisch 2002; Richins and Dawson 1992). Burroughs and Rindfleisch (2002) have argued that people who value money may put relatively little importance on relational goals such as developing and promoting positive relations with others, thereby resulting in poor relational well-being.

In support of this view, other studies have demonstrated how materialism has been associated with negative relational outcomes, such as low satisfaction with marriage, family, and friendships (Christopher et al. 2004; Kasser and Ryan 1993; Nickerson et al. 2003; Richins and Dawson 1992). Pieters (2013) has shown the vicious cycle between loneliness and materialism in which materialism leads to an increase in loneliness over time,

and that loneliness is then linked to an increase in materialism. This pattern suggests that people who experience loneliness tend to pursue wealth as a means of gaining popularity and a likable reputation, but ultimately such a shift toward materialistic values further hinders relational well-being. When materialistic concerns are activated in an experimental study, it interferes with psychosocial processes that are critical for social relations, such as motivation for social engagement, feelings of responsibility, and trust in others (Bauer et al. 2012). Taken together, these findings suggest that materialism may impede relational well-being.

1.2 The Centrality of Social Relations in Asian Cultures

Despite findings that demonstrate negative associations between social relationships and materialism, cultural variations in social orientation suggest that such associations may be shaped quite differently across cultures. The conceptualization of materialism as a self-centered value (and in opposition to other-centered values) in prior literature may be partly attributable to the sampling bias toward Western cultures in which the sense of self is predominantly experienced as being differentiated from others (Bochner 1994; Markus and Kitayama 1991). In cultures where independent social-orientation is promoted, motivation often derives from personal goals and attitudes that are distinct from others' (Markus and Kitayama 1991). In contrast, people in East Asian cultures perceive themselves as inseparable from others, particularly those with whom they have close relationships (e.g., friends, family members) or social groups that they belong to (Markus and Kitayama 1991). Accordingly, individuals' motivations, cognition, and behaviors are largely guided by relational concerns such as meeting social expectations and maintaining group harmony. Studies have shown that even personal goals that are seemingly irrelevant to affiliative motives, such as academic or career achievement goals, can be motivated by the relevance of those goals to close others in interdependent cultural contexts (e.g., Hamedani et al. 2013; Triandis 2002). This relevance of relationships with others as the driver of personal goals has been observed even for materialistic goals. Webster and Beatty (1997) showed that the consumer goals of Thai consumers reflect their public selves (i.e., social roles, family relationships, and group affiliations) more than their private selves (i.e., one's own tastes and values) whereas the pattern is reversed for American consumers.

The above findings can even be extended to explain the motivation to reward and benefit others or one's relationships with them materially in these cultural contexts. Although prior literature predicted that other-centeredness and materialism should frequently conflict (Kasser and Ryan 1993), it may be contingent on how other-centeredness and materialism operate in a given culture. People in interdependent cultures may perceive materialistic ways of living as a means to fitting in with social norms such as being a responsible family member or meeting social obligations towards their in-groups (Ahuvia and Wong 1995; Chan et al. 2009; Xie et al. 2013). Studies with East Asian subjects have shown that materialistic goals are pursued as a means of promoting their relatedness with close others as well as close others' well-being (Xie et al. 2013; Yu and Yang 1994). For example, Yu and Yang's (1994) study with 400 Taiwanese participants found that the main reason Taiwanese employees desired higher salaries was to improve their families' financial welfare.

More recently, Xie et al. (2013) examined the nature of increasing materialism among Chinese and found that Chinese participants had strong social motives for pursuing materialistic goals. Specifically, their social motives consisted of two central aspects: family responsibilities (i.e., being a responsible family member and taking care of one's children),

and social normative concerns (e.g., keeping up with social pressures to be financially successful). When comparing the underlying motives between materialistic and non-materialistic people, materialistic Chinese reported that their aspiration was strongly driven by social responsibilities and expectations whereas non-materialistic Chinese reported that their value was strongly driven by their personal ideals (i.e., having a simple and easy life, physical and mental health; Xie et al. 2013). Together, these findings suggest that social relations are as important as, if not more important, than self-centered motives among materialistic people in interdependent cultures.

1.3 Social Motives for Materialism and Relational Well-Being

The social motives underlying East Asians' materialism are important because they may serve as a psychological moderator of the association between material aspiration and relational well-being across cultures. Although materialism has been understood primarily as a form of self-centeredness, people desire wealth for various reasons (including interpersonal ones) even in independent cultures. Studies have documented that motives for acquiring wealth play an important role in how materialism is associated with life outcomes (Garðarsdóttir et al. 2009; Landry et al. 2016; Srivastava et al. 2001). For example, studies examining various motivations for desiring wealth in multiple Western countries (e.g., the US, the UK, Iceland) have consistently shown that the negative association between material aspirations and subjective well-being was no longer significant when material motives were taken into consideration (Garðarsdóttir et al. 2009). Moreover, motives that are tied to social relatedness (i.e., support for family, security) were positively associated with both material aspiration and subjective well-being (Garðarsdóttir et al. 2009). These results revealed that materialism can be linked to social motives that are distinct from external or competitive motives in social relations, such as displaying wealth or dominating others.

Such affiliative motives for materialism may lead to behaviors that foster social connectedness. Spending money for social purposes such as taking care of loved ones and enjoying time with family and friends has been linked to greater happiness, even in individualistic cultures (Aknin et al. 2011; Dunn et al. 2008). Moreover, perceived fulfillment of communal norms (i.e., meeting close others' needs and expectations) has been positively linked to close relationships across cultures (Clark and Jordan 2002; Oishi and Sullivan 2005). Thus, if money and wealth are sought to facilitate meeting communal expectations, material pursuit may promote relational well-being.

In sum, prior findings suggest the cultural moderation of the association between materialism and relational well-being. If materialism is more likely to be driven by social motives in East Asian cultures than in Western cultures, the negative association between materialism and relational well-being is less likely to be found in East Asian cultures. Although some studies have examined the associations between materialism and general well-being such as life satisfaction and positive-negative affect in non-Western cultures (e.g., China, Thailand, India; see the review in Dittmar et al. 2014), the association between relational well-being and materialism has been rarely examined in different cultural contexts. One exploratory study with a representative sample of Singaporean households found that people who exhibited high levels of materialism did not differ in the extent to which they were satisfied with various types of familial relationships (e.g., those with parents, children, siblings), compared to those who exhibited lower levels of materialism, although they differed in certain values, overall life satisfaction, and satisfaction with friends (Kau et al. 2000). Despite the exploratory nature of the study and the lack of direct cultural comparisons,

these findings raise a possibility that the associations between materialism and relational well-being may depend on cultural contexts.

The purpose of the present research was to examine cultural variations in how materialism is associated with relational well-being. Our central hypothesis was that materialism would be differently associated with relational well-being across cultures that vary in the extent to which others are implicated in the goals and desires of the individual. Specifically, materialism would be negatively associated with relational well-being in North American cultures, where the distinction between self-centered and other-centered goals is clear; in East Asian cultural contexts, however, materialism would not be negatively associated with relational well-being, since others are fundamentally embedded within individual goals and desires. Furthermore, we examined whether there would be cultural differences in social motives for materialism, such as acquiring wealth and material goods in order to be closer to friends and to support family members. We then explored whether these social motives would account for the cultural moderation of the association between materialism and relational well-being. If East Asians show higher social motives for materialism than Americans, such differences would explain how materialism is related to relational well-being differently across cultures.

Relational well-being was measured with items from two widely used well-being scales: the Psychological Well-being Scale (Ryff 1989) was employed in Studies 1a and 2, and the Flourishing Scale (Diener et al. 2010) was used in Study 1b, both of which theorized good social relationships as a central part of well-being. The scales encompass multiple facets of positive social relationships, such as having the support of others, giving support to others, and being capable of empathy and intimacy. Materialism was defined as a value that places importance on material possessions or wealth (Richins and Dawson 1992) and was measured as "money importance" in Study 1a (Srivastava et al. 2001), while also using the Material Value Scale (Richins and Dawson 1992) in Studies 1b and 2. We avoided measures derived from the frameworks that defined materialism either as being inherently negative to social relations (Kasser and Ryan 1993) or as a set of personality traits that are clearly opposed to other-centered concerns (e.g., envy [displeasure at the superiority of other people's possessions], nongenerosity [unwillingness to share with others]; Belk 1985).

Studies 1a and 1b examined the cultural moderation of the association between money importance and relational well-being. We used large data from the Midlife in the US and the Midlife in Japan in Study 1a and panel data from the US and China in Study 1b. In Study 2, we directly measured and compared social motives for money between samples from the US and China collected on crowdsourcing platforms. We then tested whether the social motives for money would explain the cultural variation of the link between materialism and relational well-being.

2 Study 1a

2.1 Methods

2.1.1 Participants

The US sample was a subset from the "Midlife in the United States II (MIDUS II)" study conducted in 2004. The first wave of MIDUS started in 1995–1996 and was based on a

national probability sample that was recruited through random digit dialing. The MIDUS II survey included a telephone interview and a self-administered questionnaire. A subset of MIDUS II respondents participated in the collection of biological and additional survey data. The current study was based on 1051 respondents (477 males, 574 females; $M_{age} = 55.26$ years, age range = 34 to 84 years) for whom money importance data were available. Most participants identified their racial backgrounds as White or European American (92.6%).

The Japanese sample was a subset from the "Midlife in Japan I (MIDJA I)" project, which recruited a randomly selected sample from the Tokyo metropolitan area. A subset from this study included participants who visited a medical clinic near the University of Tokyo and provided biological and additional survey data. The current study was based on 381 respondents (168 males, 213 females; $M_{age} = 54.24$ years, age range = 30 to 79 years) who completed a questionnaire measuring money importance.

2.1.2 Measures

Money importance was measured by assessing the relative importance that extra money has on living a good life and was employed as a measure of materialism (Srivastava et al. 2001). Respondents were asked to choose five out of seventeen items that they regard as most important for living a good life. The items included autonomy, having a good job, continual learning and growth, enjoyment of life's pleasures, enough money to meet basic needs, extra money/disposable income, faith, giving back to my community, loving and caring for myself, physical fitness and strength, positive attitude, positive relationships with family, positive relationships with friends, relaxation/peacefulness/contentment, the absence of illness, sense of accomplishment, and sense of purpose. Money importance was coded into a categorical variable based on whether respondents chose extra money/disposable income as one of the five items that are most important for living a good life ($-0.5 = $ no, $0.5 = $ yes).

The scale of positive relations with others (Ryff 1989) was used to measure relational well-being. The scale consists of seven items, including four reverse-coded items assessing whether a person has warm, satisfying, and trusting relationships with others (e.g., "I have not experienced many warm and trusting relationships with others"), rated on a seven-point scale (1 = strongly disagree, 7 = strongly agree). Ratings for the seven items were averaged to form the scale scores (Cronbach's alpha = 0.80 for Japanese and 0.79 for Americans).

We included demographic variables, financial situations, and relationship status as covariates that may differ between two cultures and may affect relational well-being. Participants' self-reported age and gender were included. Education levels were included as a measure of socio-economic status (1 = 8th grade/junior high or less; 2 = some high school; 3 = high school graduate/GED; 4 = one or more years of college, no degree; 5 = two-year college degree/vocational school; 6 = four-/five-year college bachelor's degree; 7 = at least some graduate school). Although income is another component of SES that has been linked to materialism, income measure was not available for the Japanese sample. Instead, we included two variables of financial situations available in both samples: economic hardship and past bankruptcy. Economic hardship was measured by asking whether anyone in their household had experienced any financial difficulties such as low income and debt during the past 12 months ($-0.5 = $ no, $0.5 = $ yes). Participants also reported whether they had ever experienced bankruptcy in the past ($-0.5 = $ no, $0.5 = $ yes). For relationship status, current

Table 1 Characteristics of the Japanese and American samples in Study 1a

Variable	Japanese			Americans		
	N	M	SD	N	M	SD
Extra money importance (% of Yes)	381	13.9		1054	14.7	
Relational well-being	381	3.65	1.16	1053	5.09	1.41
Covariates						
Age	381	54.26	14.12	1054	55.23	11.78
Gender	381	0.56	0.50	1054	0.55	0.50
Education	377	4.38	1.63	1051	4.96	1.61
Economic hardship (% of Yes)	350	16.6		1028	35.2	
Past Bankruptcy (% of Yes)	381	1.8		1054	1.9	
Having any children (% of Yes)	379	73.1		1054	86.8	
Marital status (%)	380			1052		
Married		72.9			72.2	
Separated		1			1.6	
Divorced		5.5			12.6	
Widowed		5.8			5.4	
Never married		15			8.1	

Gender: 0=male; 1=female. Education: 1=8th grade/junior high or less; 2=some high school; 3=high school graduate/GED; 4=one or more years of college, no degree; 5=two-year college degree/vocational school; 6=four-/five-year college bachelor's degree; 7=at least some graduate school

marital status (a factor variable with 5 categories: married, separated, divorced, widowed, never married) and the existence of children (-0.5=no, 0.5=yes) were used.

2.2 Results and Discussion

We conducted multiple regression analyses to test our hypothesis that culture would moderate the relationships between money importance and relational well-being. Culture (Japan=0, US=1), money importance, and their interaction term were entered along with all the control variables (see Table 1 for the descriptive statistics and Table S1 in Supplemental Material for zero-order correlations of the variables).

As predicted, there was a significant interaction between culture and money importance for predicting relational well-being, $b=-0.344$, 95% confidence interval (CI)=[-0.569, -0.118], $t(1382)=2.99$, $p=0.003$, $\eta_p^2=0.006$ (see Table 2 and Fig. 1).[1] To further probe

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[1] There was also a significant main effect of culture on relationship well-being. The core essence of interdependence is that the self is construed and experienced as an entity fundamentally embedded in social relationships, which is orthogonal to the quality of the relationship (Adams et al. 2004). In addition, the result could be due to the cultural differences in response styles (Chen et al. 1995) and self-enhancement (Heine et al. 1999). To check whether the cultural moderation was affected by the mean level cultural differences in relational well-being, we re-ran the analysis with within-culture standardized scores of relational well-being across the studies. The findings remained unchanged.
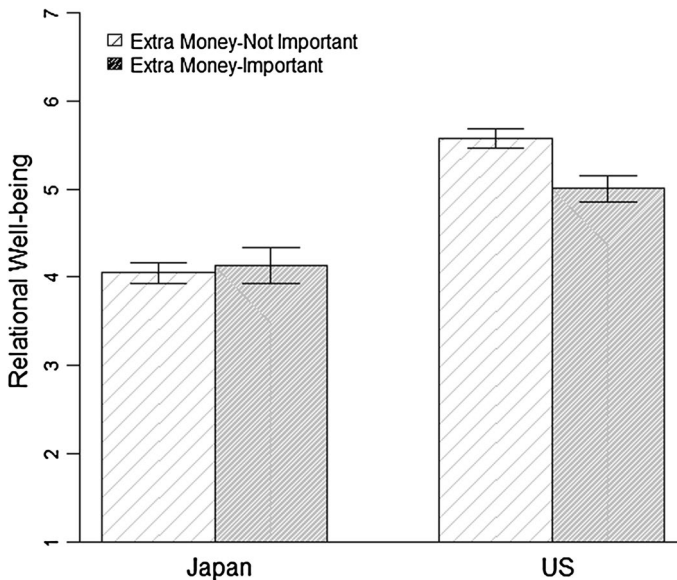
Table 2 Results of the Study 1a regression model predicting relational well-being as a function of the interaction between culture and money importance

Outcome: Relational well-being

Predictor	b (SE)	95% CI
(Intercept)	2.795 (0.188)***	[2.426, 3.164]
Culture	0.608 (0.060)***	[0.492, 0.723]
Money importance	0.104 (0.199)	[−0.285, 0.494]
Culture × Money importance	−0.344(0.115)**	[−0.569, −0.118]
Age	0.016 (0.003)***	[0.011, 0.022]
Gender	0.469 (0.071)***	[0.329, 0.609]
Education	0.064 (0.022)**	[0.021, 0.107]
Economic hardship	−0.314 (0.078)***	[−0.467, −0.161]
Past bankruptcy	−0.200 (0.127)	[−0.449, 0.05]
Having children	0.019 (0.115)	[−0.207, 0.245]
Marital status	−0.147 (0.03)***	[−0.205, −0.088]

Culture: 0 = Japan; 1 = US Money importance, economic hardship, past bankruptcy, having children: −0.5 = No; 0.5 = Yes. Gender: 0 = male; 1 = female

**p ≤ 0.01, ***p ≤ 0.001

the interaction, we ran a simple slope analysis within the data set for each culture (Aiken and West 1991). Americans who answered that extra money is an important element of a good life exhibited lower relational well-being than Americans who did not choose extra money as an important element of a good life, $b = -0.583$, 95% CI = [−0.808, −0.358], $t(1382) = 5.07$, $p < 0.001$, $\eta_p^2 = 0.014$. In contrast, there was no significant difference in

Fig. 1 Materialism (i.e., importance of extra money in living a good life) predicting relational well-being for Japanese and Americans in Study 1a

relational well-being between Japanese participants who placed importance on extra money and those who did not place importance on extra money, $t(1389) = 0.52$, $p = 60$.

The results of Study 1a supported our hypothesis that the association between materialism and relational well-being is moderated by cultural contexts. Money importance predicted lower positive relationships among Americans but not among Japanese. The cultural moderation of the association between relational well-being and money importance suggests that materialistic tendencies may not be at the cost of relational well-being in Japanese culture. However, since it was unclear whether the results are due to characteristics specific to Japanese culture or generalizable to other East Asian cultures, we expanded the question to China in Study 1b.

3 Study 1b

For Study 1b, we compared survey data from the US and China to examine whether we could replicate the cultural difference found between the US and Japan in Study 1a. In addition, we employed a multi-item scale for measuring materialism (i.e., the Material Value Scale; Richins and Dawson 1992), a scale that enhances measurement reliability and generalizability of the findings across different measurements of the value that people put on material acquisition.

3.1 Methods

3.1.1 Participants

Data were from a consumer survey which was originally conducted for a different project beyond the scope of the current study. Convenient online panels were recruited from the US and China. Although these were not nationally representative according to census data, the samples were recruited to reflect a range of ages and locations across each country. The US sample consisted of 370 participants (Male = 143; M age = 43.93, SD age = 14.73) and the Chinese sample included 391 participants (Male = 234; M age = 38.64, SD age = 10.71) with the relevant variables of interest.

3.1.2 Measures

Materialism was measured with a 9-item version of the Material Value Scales (Richins 2004; Richins and Dawson 1992). Participants rated the importance of money and material acquisition in their lives on a 5-point Likert scale with categories of strongly disagree, disagree, neutral, agree, and strongly agree. The items consisted of three dimensions (i.e., happiness, centrality, and success) of money importance (e.g., "I'd be happier if I could afford to buy more things," "I admire people who own expensive homes, cars, and clothes," "I like a lot of luxury in my life"; Cronbach's alpha = 0.80 in the Chinese sample and 0.85 in the US sample).

Relational well-being was measured by the Flourishing Scale that assesses relational well-being (Diener et al. 2010). Participants rated the extent to which they agree with the three statements (i.e., "my social relationships are supportive and rewarding," "I actively

contribute to the happiness and well-being of others," "People respect me") on a 7-point scale (Cronbach's alpha = 0.81 in the Chinese sample and 0.80 in the US sample).

Age, gender, and years of education were included. Income was measured as a categorical variable based on each country's census data on the distribution of personal annual income. Because the number of brackets was different across the two countries depending on the income percentile cut-off points available for each country, income was standardized within each country.

3.2 Results and Discussion

We conducted a linear regression analysis in which materialism (mean-centered), culture (0 = China, 1 = the US), the materialism x culture, and the covariates were entered to predict relational well-being (see Table 3 for the descriptive statistics of the variables and Table S2 for their zero-order correlations).

Consistent with the hypothesis, culture moderated the association between materialism and relational well-being, $b = -0.570$, 95% CI = [−0.809, −0.332], $t(753) = 4.69$, $p < 0.001$, $\eta_p^2 = 0.028$ (Table 4). Simple slope analyses showed that there was no association between materialism and relational well-being in the American sample, $b = 0.062$, 95% CI = [−0.084, 0.208], $t(753) = 0.84$, $p = 0.4$, whereas materialism predicted relational well-being positively among Chinese participants, $b = 0.633$, 95% CI = [0.439, 0.827], $t(753) = 6.40$, $p < 0.001$, $\eta_p^2 = 0.052$ (Fig. 2).

Study 1b thus replicated the results that materialism and relational well-being was differently associated when comparing American and East Asian cultures (i.e., China). The directions of the simple slopes were different from Study 1a in that materialism was positively associated with relational well-being in China but was not associated with relational well-being in the US. One possibility is that materialism in the Study 1b sample was motivated by other-centered concerns more strongly to the extent that they overrode the self-centered concerns of materialism that have been found to negatively impact relational well-being in prior research. In addition, in contrast to Study 1a, where the majority of participants were European Americans (92.6%), the American sample in Study 1b might have included a significant number of people who have more complex cultural backgrounds (e.g., Asian Americans), who may have more specifically social motives for materialism than European Americans. Because we did not have measures for the underlying motives or cultural/ethnic backgrounds in the dataset used in Study 1b, we will return to this issue in Study 2. In spite of the unexpected direction of the simple slope analyses, these findings provide further evidence for the cultural moderation of the associations between materialism and relational well-being.

4 Study 2

Across two studies we have shown that cultures vary considerably in the degree to which materialism predicts relational well-being. The results supported the hypothesis that cultures with varying models of social orientation may shape the association between money and relational well-being differently. In Study 2, we further examined (1) whether culture would predict differences in social motives for materialism; (2) whether social motives moderate the link between materialism and relational well-being; and (3) whether cultural differences in social motives would mediate the cultural differences in the link between

Table 3 Characteristics of the Chinese and American samples in Study 1b

Variable	Chinese (n = 391)		Americans (n = 370)	
	M	SD	M	SD
Materialism	3.28	0.56	2.89	0.79
Relational well-being	4.86	1.02	5.22	1.23
Covariates				
Age	38.6	1.7	43.9	14.7
Gender	0.51	0.49	0.39	0.49
Education years	15.97	2.81	14.88	3.13
Income (% of people above national median income)	6.1%		4.8%	

Gender: 0 = female; 1 = male

Table 4 Results of the Study 1b regression model predicting relational well-being as a function of the interaction between culture and materialism

Outcome: Relational well-being

Predictor	b (SE)	95% CI
(Intercept)	4.335 (0.258)***	[3.83, 4.84]
Culture	0.44 (0.086)***	[0.271, 0.609]
Materialism	0.633 (0.099)***	[0.439, 0.827]
Culture x Materialism	−0.57 (0.122)***	[−0.809, −0.332]
Age	0.007 (0.003)*	[0.001, 0.014]
Gender	−0.134 (0.083)	[−0.297, 0.03]
Education	0.013 (0.014)	[−0.014, 0.039]
Income	0.163 (0.042)***	[0.081, 0.245]

Culture: 0 = Japan; 1 = US Gender: 0 = female; 1 = male. Materialism was centered at the mean level

$*p \leq 0.05$, $***p \leq 0.001$

materialism and relational well-being. Thus far we have hypothesized the cultural moderation of the association between materialism and relational well-being because the cultural emphasis on interdependence with others in East Asian cultures is more likely to motivate people to pursue money for their social relations as compared to European American cultures. However, we have not directly tested the cultural difference in such social motives for materialism. Although prior research documented the prevalence of social motives for materialism within East and South-East Asian cultural samples (e.g., Webster and Beatty 1997; Xie et al. 2013), the thesis that these social motives are substantially different from Western cultures has not been tested. We therefore recruited European American[2]

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[2] To ensure that the sample represents independent cultural contexts, we recruited European Americans for the US sample.
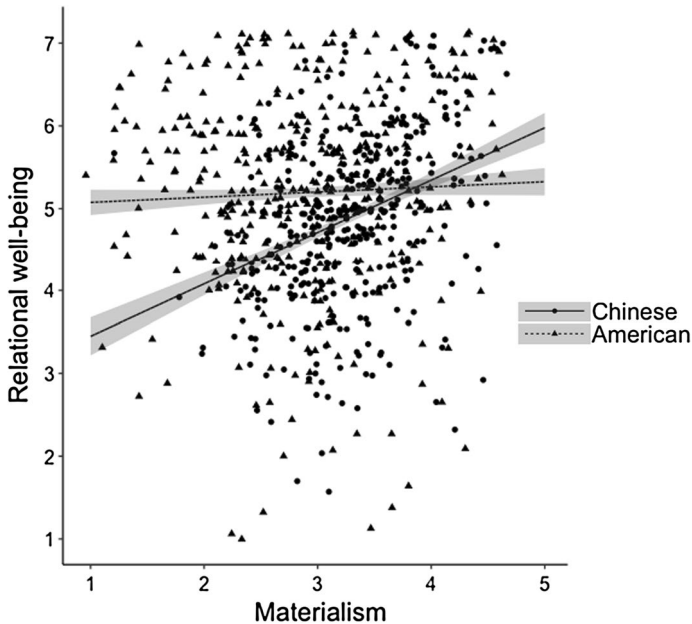
Fig. 2 Materialism predicting relational well-being for Chinese and Americans in Study 1b

and Chinese participants, and tested whether Chinese participants reported higher social motives for materialism than American participants.

Furthermore, we examined whether social motives interacted with materialism to predict relational well-being, and thus would account for the cultural moderation of the association between materialism and relational well-being. If people value material possessions and wealth because those resources allow them to take care of others or to have quality time with their close others, their materialistic values may be positively associated with positive relations with others. On the other hand, if people place great value on material goods but do not expect material acquisition to enhance their social relationships, their materialism is likely to conflict with social relationships and would negatively predict relational well-being. Accordingly, we expected that materialism would predict relational well-being differently between the Chinese and US samples because Chinese participants would exhibit higher social motives for materialism than Americans.

4.1 Methods

4.1.1 Participants

We conducted power analysis with G*power (Faul et al. 2009) with alpha set at 0.05 and power set at 0.90. The effect size was based on the average effect size of Study 1a and Study 1b for cultural moderation ($f^2 = 0.017$). The result revealed a minimum sample of 509. To ensure that we would have at least 509 participants after excluding participants who failed a screening item, we aimed to recruit more than 509 but fewer than 600 respondents. In total, 343 European American participants were recruited from an online subject pool,

Amazon's Mechanical Turk, and 224 Chinese participants were recruited from an online subject pool in China that resembles Amazon's Mechanical Turk. For both samples, we asked their cultural backgrounds in the survey again to ensure that they met the recruitment criteria. We also included the screening item at the end asking whether they completed the survey honestly and attentively or not while emphasizing that the answer would not have any bearing on their payment. After excluding participants who answered no to the question (n = 11), the final sample size was 333 for Americans (Female = 44%, M_{age} = 36.15, SD_{age} = 10.28) and 224 Chinese (Female = 59%, M_{age} = 31.95, SD_{age} = 6.25).

4.1.2 Measures

Materialism was measured by the Material Value Scales as in Study 1b, except that the items were rated on a 7-point Likert scale with categories of strongly disagree, disagree, somewhat disagree, neither agree or disagree, somewhat agree, agree, and strongly agree. Relational well-being was measured by the 7-item relational well-being scale as in Study 1a. The Cronbach alphas were 0.91 for American sample and 0.85 for Chinese sample. Demographic information included measures of age, gender, education, and income. Participants reported their highest education attainment (1 = less than high school; 2 = high school graduate; 3 = some college, no degree; 4 = two-year college degree/vocational school; 5 = four-/five-year college bachelor's degree; 6 = at least some graduate school; 7 = Doctorate). Annual income was reported in ten categories.[3] Economic hardship was measured by asking whether their household experienced any financial difficulties such as low income and debt in the past 12 months (− 0.5 = no, 0.5 = yes).

Social motives for materialism were assessed based on the extent to which people expect their material gains to transform to positive relational outcomes (Richins 2011). The items included three statements: "If I own more money, I would have more or better quality time with people I care about", "If I own more money, I would become closer with my friends", and "If I own more money, I would have better relationships with others". Participants rated the degree of agreement on a 7-point scale (Cronbach's alpha = 0.90 for American sample; 0.80 for Chinese sample).

4.2 Results and Discussion

Culture was coded as a dummy variable (China = 0, the US = 1), and materialism and social motives were mean-centered when they were entered as predictors in the analyses. Demographic information and economic hardship were controlled for in the following analyses. Table 5 presents descriptive statistics for all variables and Table S3 presents the zero-order correlations.

We first tested whether culture predicted social motives for materialism using linear regression analysis. As expected, Chinese participants reported higher social motives for materialism compared to American participants, $b = − 2.78$, 95% CI = [− 2.54, − 2.02], $t(551) = 17.25$, $p < 0.001$, $\eta_p^2 = 0.32$.

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[3] Income categories: 1 = less than \$12,500 (less than 6000 yuan); 2 = \$12,501 to \$20,000 (6001 to 12,000 yuan); 3 = \$20,001 to \$27,500 (12,001 to 24,000 yuan); 4 = \$27,501 to \$35,000 (24,001 to 36,000 yuan); 5 = \$35,001 to \$42,500 (36,001 to 60,000 yuan); 6 = \$42,501 to \$50,000 (60,001 to 120,000 yuan); 7 = \$50,001–\$62,500 (120,001 to 240,000 yuan); 8 = \$62,501 to \$75,000 (240,001 to 600,000 yuan); 9 = \$75,001 to \$100,000 (600,001 to 1200,000 yuan); 10 = More than \$100,000 (more than 1200,000 yuan).

Next, we tested whether social motives for materialism moderates the association between materialism and relational well-being using linear regression analysis. Relational well-being was regressed on the social motives, materialism, the materialism x social motives interaction, controlling for the covariates and culture. As predicted, social motives moderated the association between materialism and relational well-being, $b=0.055$, 95% CI=[0.016, 0.094], $t(547)=2.74$, $p=0.006$, $\eta_p^2=0.013$. As Fig. 3 shows, the association between materialism and relational well-being was positive for people with high (1 SD above the mean level) social motives for materialism, $b=0.126$, 95% CI=[0.004, 0.247], $t(549)=2.02$, $p=0.04$. In contrast, there was no association between materialism and relational well-being for people with low (1 SD below the mean) social motives for materialism, $b=-0.072$, 95% CI=[-0.166, 0.022], $t(547)=1.50$, $p=0.14$. Inspecting the region of significance showed that materialism was negatively associated with relational well-being when the social motive for materialism was lower than 1.22, but positively associated with relational well-being when the social motive for materialism was higher than 5.4.

Finally, we examined whether (a) cultural difference in the level of social motives for materialism and (b) the social motives x materialism interaction on relational well-being mediate the cultural moderation of the association between materialism and relational well-being. We conducted a bootstrapping analysis of indirect effects (Hayes 2017) with 5000 bootstrap resamples and 95% confidence intervals (CIs) to test the model (Fig. 4). Although the culture x materialism interaction (the total effect) was not significant, $b=-0.082$, 95% CI=[-0.247, 0.081], $t(548)=0.99$, $p=0.323$, there was

Table 5 Characteristics of the Chinese and American samples in Study 2

Variable	Chinese (n=224)		Americans (n=333)	
	M	SD	M	SD
Materialism	4.29	.93	3.82	1.30
Social Motives	5.14	.99	2.81	1.59
Relational Well-being	5.57	.71	4.97	1.19
Covariates				
Age	31.95	6.26	36.15	1.89
Gender	0.42	0.49	0.56	0.50
Education	4.89	0.76	4.12	1.27
Income	5.93	0.94	4.39	2.60
Economic hardship (% of Yes)	41.1%		49.8%	

Gender: 0=female; 1=male. Education: 1=less than high school; 2=high school graduate; 3=some college, no degree; 4=two-year college degree/vocational school; 5=four-/five-year college bachelor's degree; 6=at least some graduate school; 7=Doctorate. Income (annual): 1=less than $12,500 (less than 6000 yuan); 2=$12,501 to $20,000 (6001 to 12,000 yuan); 3=$20,001 to $27,500 (12,001 to 24,000 yuan); 4=$27,501 to $35,000 (24,001 to 36,000 yuan); 5=$35,001 to $42,500 (36,001 to 60,000 yuan); 6=$42,501 to $50,000 (60,001 to 120,000 yuan); 7=$50,001–$62,500 (120,001 to 240,000 yuan); 8=$62,501 to $75,000 (240,001 to 600,000 yuan); 9=$75,001 to $100,000 (600,001 to 1,200,000 yuan); 10=More than $100,000 (more than 1,200,000 yuan)
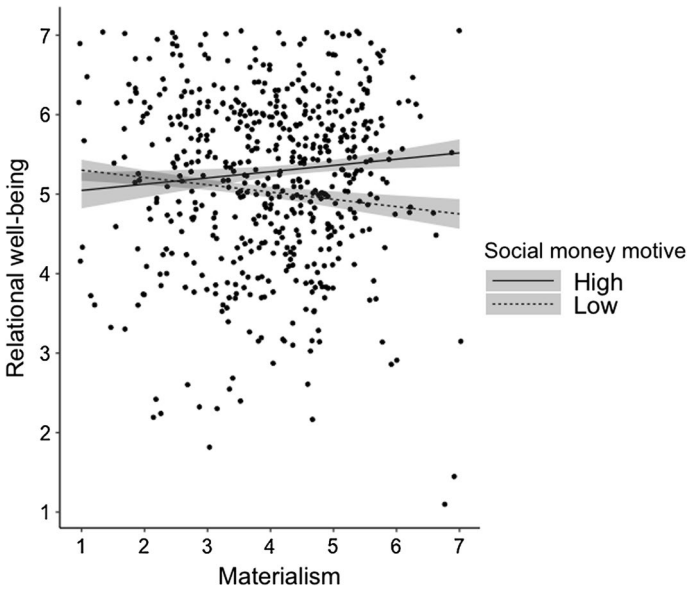
Fig. 3 Materialism and social motives for materialism interact to predict relational well-being in Study 2
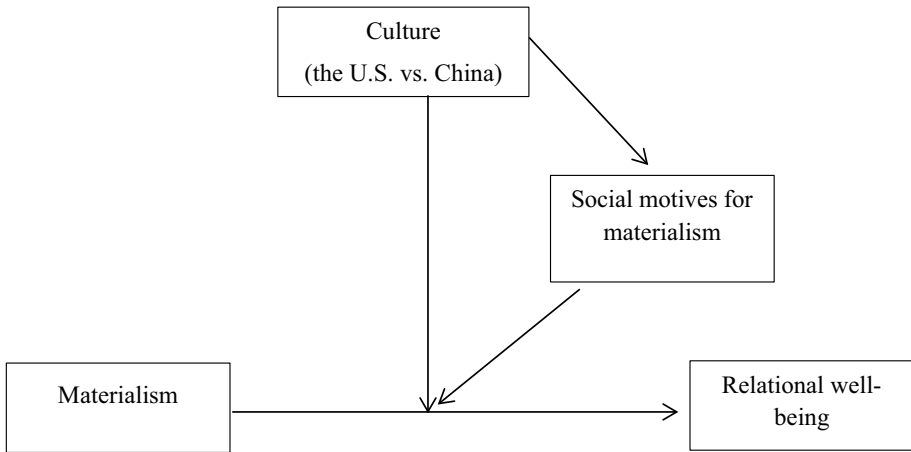

Fig. 4 Conceptual diagram of the indirect effect in which the culture × materialism interaction is mediated by the social motives x materialism interaction (Study 2)

an indirect effect of culture on relational well-being via the cultural differences in the social motives and the social motives x materialism interaction on relational well-being. Culture predicted social motives for materialism, $b = -2.78$, 95% CI = $[-2.54, -2.02]$, $t(551) = 17.25$, $p < 0.001$, $\eta_p^2 = 0.32$, and social motives for materialism moderated the relationship between materialism and relational well-being, controlling for the culture x materialism interaction, $b = 0.073$, 95% CI = $[0.022, 0.125]$, $t(546) = 2.81$, $p = 0.005$, $\eta_p^2 = 0.015$ (see Table 6). A bootstrapping test for the indirect effect with 5000 resamples showed that the mediation of the social motives x materialism was statistically

Table 6 Results of the Study 2 regression model predicting relational well-being as a function of the interaction between culture and materialism and the interaction between materialism and social motives for money

Outcome: Relational well-being		
Predictor	b (SE)	95% CI
(Intercept)	5.666 (0.299)***	[5.078, 6.254]
Culture	−0.641 (0.128)***	[−0.892, −0.391]
Materialism	−0.049 (0.081)	[−0.207, 0.11]
Social motives	−0.033 (0.035)	[−0.101, 0.035]
Culture × Materialism	0.12 (0.109)	[−0.094, 0.334]
Social motives × Materialism	0.073 (0.026)**	[0.022, 0.125]
Age	0.007 (0.005)	[−0.002, 0.016]
Gender	−0.183 (0.086)*	[−0.351, −0.014]
Education	−0.066 (0.04)	[−0.145, 0.013]
Income	066 (0.022)**	[0.022, 0.109]
Economic hardship	−0.309 (0.09)***	[−0.487, −0.132]

Culture: 0 = China; 1 = US Gender: 0 = female; 1 = male. Social motives for money and materialism were centered at the mean levels

*$p \leq 0.05$, **$p \leq 0.01$, ***$p \leq 0.001$

significant (*index of indirect effect* = − 0.120, *SE* = 0.048, 95% bias-corrected bootstrapping CI = [− 0.220, − 0.039]). The results supported our model; European American participants were more likely to show the negative association between materialism and relational well-being via low social motives for materialism, whereas Chinese participants were less likely to show the association between materialism and relational well-being via high social motives for materialism.

5 General Discussion

In Studies 1a and 1b, we have found cultural differences in the association between materialism and relational well-being. The association between materialism and relational well-being was negative or absent in the US participants. On the other hand, the association between materialism and relational well-being was absent for the Japanese participants and positive for the participants from China. Moreover, in Study 2, Chinese subjects showed higher social motives for materialism than European Americans, and those people who had high social motives for materialism showed a positive association between materialism and relational well-being. These findings suggest that materialism predicts relatively positive relational well-being in East Asian cultures compared to Western cultures because high materialism in interdependent cultures tends to be a means of promoting relatedness more than in independent cultures that value individualism. Overall, the findings suggest that the culturally prevalent way of social orientation may affect how materialism is implicated in relational well-being.

Our study extends the limited number of studies showing that high materialism among East Asian cultures is not only compatible with but can be motivated by social relations (Awanis et al. 2017; Xie et al. 2013). Our data showed that social motives for materialism were greater among Chinese participants than among European American subjects.

Furthermore, we tested whether materialism would be differently associated with relational well-being between these cultures, given the differences in social motives. Although social motives for materialism in East Asian cultures have been previously documented, it was unclear whether these motives lead to positive social outcomes. On the one hand, research focusing on the controlling feature of money as an extrinsic reward (e.g., Kasser et al. 2007) suggests a potential negative association between materialism and relational well-being across cultures despite cultural variations in social motives for materialism. On the other hand, the findings about specific motives for materialism predicting different outcomes (e.g., Srivastava et al. 2001) suggest potential cultural differences in the association between materialism and relational well-being when cultures differ in the centrality of social motives for materialism. Our findings fill the gap in the existing literature by testing these competing predictions and highlighting culture as a factor that contributes to the relationship between relational well-being and materialism.

It is important to note that the evidence was weak for negative associations between materialism and relational well-being even in independent cultures. In Study 1b and 2 (but not in Study 1a), American samples did not show the negative association between materialism and relational well-being that has been reported in the literature. One possible account is that the association between materialism and social relationships may not be as inherently negative but rather contingent on the cultural meanings of wealth and possessions that change over time. Most empirical findings showing a negative association between materialism and relational well-being with adult samples, including Study 1a, were conducted more than a decade ago (e.g., Kasser and Ryan 1993; Richins and Dawson 1992). Importantly, recent research suggests that material possessions are now less frequently used to flaunt social superiority because of a rise of their accessibility (Currid-Halkett 2017; Eckhardt et al. 2015). Rather, luxury consumption is now more likely to involve inconspicuous purchases that are relevant to the quality of personal life or facilitate interactions with social peers with shared interests (e.g., high-tech people; Eckhardt et al. 2015). In light of such social shifts, high levels of materialism may be driven less by motives of social comparison than the earlier research had shown, and thus less likely to jeopardize relational well-being even in individualistic cultures. Future work may explore this possibility and clarify the consequences of such social trends of materialism.

Another important question is whether materialism impairs relational well-being in independent cultures, or conversely, enhances relational well-being in interdependent cultures. Our findings suggest that the answer may be more complex than a cultural dichotomy. Although our findings showed the consistent cultural differences in which materialism predicted relational well-being in a *relatively* positive way for interdependent cultures in comparison with independent cultures, such cultural differences were explained by individual differences in social motives for materialism. Thus, even in independent cultures, among those people with high social motives for materialism, materialism can be positively associated with relational well-being. In addition, we did not test other correlates of materialism that may have negative impacts on relational well-being, such as insecurity or negative affect (Dittmar et al. 2014). It is thus unclear whether cultural differences would exist for these other aspects of materialism, which would affect the overall directionality of the effect of materialism on relational well-being across cultures. This complexity calls for thoughtful approaches to cultural moderation of the link between materialism and social relationships.

It was unexpected that the cultural moderation of the link between materialism and relational well-being was not statistically significant in Study 2. One possible cause is that the Chinese sample in Study 2 was homogeneously high in socio-economic status: 85%

of participants were college graduates, 56% belonged to the single bracket of 60,001 to 120,000 yuan annual income, and 95% were currently employed. Because higher socio-economic status has been positively associated with both self-orientation (e.g., independence, agency) and other-orientation (e.g., helping others, feeling of responsibility) in East Asian cultures (Miyamoto et al. 2018), it is unclear if these Chinese sample characteristics would lead to the attenuation of the cultural moderation. Nonetheless, the results suggest that it may be important to consider the moderation of cultural characteristics varying not only across countries but also within a given country in assessing the association between materialism and relational well-being.

The current study is a cross-sectional, correlational design and thus cannot determine the causal direction between materialism and relational well-being across cultures. Prior studies have suggested that low relational well-being may contribute to an increase in material values because people whose need for social connection is frustrated tend to rely on material possessions as a substitute (Pieters 2013). Thus, it is possible that our study found the cultural moderation of the association between relational well-being and materialism because low relational well-being increases materialism in individualistic cultures, but not in collectivistic cultures. Although the cultural moderation of the effect of materialism on relational well-being may be more in line with existing theories of cultural psychology, future research requires longitudinal studies to test this possibility.

Another limitation is that Study 1b and Study 2 used convenience samples. Although the study used community samples recruited across different regions of each country, the samples primarily consisted of people with high educational attainment. In addition, we recruited only European Americans for the US sample in Study 2. Although our decision to exclude other racial groups was to maximize the contrast between independent vs. interdependent cultures, it does not allow us to test whether the findings would hold in other racial groups in the US These specific demographics of the samples limit the generalizability of the findings to the national population.

Notwithstanding these issues, the present study is the first to show that culture moderates the link between materialism and relational well-being, in addition to predicting the social motives for materialism, which in turn moderates the link between materialism and relational well-being. Although previous studies have shown the importance of examining specific motives for materialism in order to understand the consequences of materialism, past studies have not investigated what may cause the variation in the motives for materialism across cultures. Our findings fill the gap by showing that culture may affect the degree to which people have social motives for materialism. The findings have broad implications for the quality of life of diverse populations in an era when global economic systems give rise to materialism.

Compliance with Ethical Standards

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