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Selecting the special or choosing the common? A high-powered conceptual replication of Kim and Markus' (1999) pen study

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ABSTRACT

Kim and Markus (1999; Study 3) found that 74% of European Americans selected a pen with an uncommon (vs. common) color, whereas only 24% of East Asians made such a choice, highlighting a pronounced cross-cultural difference in the extent to which people opt for originality or make majority-based choices. The present high-powered study ($N = 729$) conceptually replicates the results from Kim and Markus (1999; Study 3), although our effect size ($r = .12$) is significantly weaker than that of the original study ($r = .52$). Interestingly, a larger proportion of Chinese, but not US, participants selected a pen with an uncommon color now than during the original study. Thus, our findings indicate a potential transmission of certain Western values to cultures traditionally characterized by collectivism and conformity, likely exacerbated by the globalization of mass media and the rapid economic growth in many East Asian countries.

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Cross-cultural; replication; self-construal; collectivist; individualistic; uniqueness

Introduction

People worldwide differ considerably with respect to the dominant self-construal in their cultures, which has been shown to affect cognition, emotion, and motivation (Markus & Kitayama, 1991). Independent self-construal is linked to direct communication and self-promotion, whereas interdependent self-construal is associated with indirect communication and group coherence (Cross et al., 2011). In many East Asian cultures, where interdependent self-construal has been dominant, people typically perceive themselves in relation to others, with societal harmony being a guiding principle in life (Markus & Kitayama, 1991). Western countries, on the contrary, are often characterized by independent self-construal, with individuals striving to distinguish themselves from others and demonstrate uniqueness (Oyserman et al., 2002; see, Vignoles et al., 2016 for a conceptualization that goes beyond the Westerners and East Asians dichotomy).

People raised in East Asian cultures have been shown to think holistically by seeing a field rather than individual objects and assigning causality for the behaviors of objects in relation to the surrounding environment. Conversely, their Western counterparts are more inclined to focus on individual objects and use rules of formal logic to understand the behaviors of these objects while being more prone to neglect the environment in which these objects occur (Morris & Peng, 1994; Nisbett et al., 2001). For example, consumers from cultures where holistic thinking is widespread tend to perceive brand extensions as more consistent with parent brands and evaluate them more positively than consumers from cultures where analytic thinking oriented at seeing differences between categories is more common (Monga & John, 2007). Similarly, people from cultures characterized by independent (vs. interdependent) self-construal find ads appealing to independence, autonomy, and personal success more persuasive (Han & Shavitt, 1994).

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Diverse empirical studies imply that culture-specific self-construal affects decision-making. For example, Kim and Markus (1999) asked European Americans and East Asians to choose their preferred pen as a gift. Participants could select one of five pens available in orange and green, in different color ratios (e.g., one-to-four or two-to-three). More than 70% of the European Americans selected the pen with the unique color, whereas only 24% of the East Asians made such a choice. In other words, the European American sample opted for originality, whereas the East Asian sample were more motivated to make majority-based choices.¹

Although these tendencies have arguably evolved throughout human history, recent globalization of digital services (e.g., Netflix, Facebook, Instagram) and their associated worldwide access to foreign information sources may have resulted in certain culture-specific changes. A report by the Motion Picture Association (2018) highlights that the motion pictures industry in the United States (US) exports four times more than it imports, with this trade surplus being more pronounced than in other industries, such as mining or telecommunications. With international revenues often surpassing those generated by a domestic market, the Hollywood film industry plays a pivotal role in global culture (Crane, 2014). As such, it is possible that certain values traditionally associated with being American, such as independent self-construal, are exported as “by-products” through these media channels.

The current research report has two primary purposes. First, using the conceptual replication approach due to its superior ability to progress and test theory across methods (Crandall & Sherman, 2016), we test the replicability of the results from Kim and Markus (1999; Study 3) famous pen experiment in a high-powered study. Although influential, the original study relied on a small sample size, falling short of current standards for sample size estimation and power calculations. Second, given the recent globalization of mass media coupled with rapid economic progress of many East Asian cultures during the last few decades (MGM Research, 2018), we investigate whether people in cultures with interdependent self-construal (e.g., China) now exhibit choice patterns that are more aligned with those found in cultures with independent self-construal (e.g., the US). Specifically, we hypothesize that a larger proportion of Chinese will choose a uniquely colored pen now than during the time of Kim and Markus (1999) original work, conducted more than 20 years ago.

Method

Participants ($N = 729$, 55% female; $M_{\text{age}} = 33.47$ years, $SD = 12.11$) were recruited through Prolific. The obtained sample size is sufficient to detect an effect size as small as Cramér’s $V = .10$ with a power of .80 (requiring $N = 618$) or an effect size of $V = .20$ with a power of .99 (requiring $N = 394$), given the one-tailed predictions (Cohen, 2013). Note that both these effect sizes are substantially smaller than that of the original study ($V = .52$). Of the total sample, 499 were from the US, and 230 were from China. The different cell sizes can be explained by the fact that more US (vs. Chinese) participants are available on this online panel (cf., Gillani et al., 2021). Participants who indicated the US (vs. China) as their country of birth were categorized as US (vs. Chinese) participants. Similar to Kim and Markus (1999; Study 3), we did not ask participants about their ethnicity. We used the “effectsize” package (Ben-Shachar et al., 2020) for R to calculate effect size from the original study, and the “Hmisc” package (Harrell, 2021) to calculate 95% confidence intervals for binomial probabilities.

Mirroring the original study by Kim and Markus (1999; $N = 56$), participants were presented with a choice task in which they were instructed in English to choose a pen among five available alternatives: four orange (common) and one green (uncommon). Specifically, they received the following question, immediately followed by the two choice options (green vs. orange): “Imagine there are five pens, of which four are orange and one is green. Now you have to select one pen out of these five. Which pen would you select?” Participants’ pen choice (common vs. uncommon) served as the dependent variable. We used the colors of orange and green, given that Kim and Markus (1999) found these colors to be rated as equally preferable.

Unlike the original study, we used a more subtle presentation format to test the external validity of prior findings. Participants were only presented with the different choice options in text rather than in actual, physical format. Whereas some scholars have indicated that stimuli featured in vivid presentation formats carry greater weight in individuals' decision-making (Mischel & Moore, 1973; Shiv & Fedorikhin, 1999), others have questioned the very existence of such a vividness effect, concluding that vividly presented information is rarely – if ever – more persuasive than nonvividly presented information (Collins et al., 1988; Taylor & Thompson, 1982). In fact, a recent meta-analysis on the effects of vividness on persuasion showed signs of publication bias and concluded that "the vividness effect, if existing, is somewhat weak; which may explain why studies have found so different and contradictory results" (Blondé & Girandola, 2016, p. 125). Therefore, we restricted our presentation format to text, which also mitigated confounds due to color blindness in participants and the visual saliency of pictorial stimuli (Etchebehere & Fedorovskaya, 2017).

Results

A Pearson's chi-square analysis using 2 (US vs. Chinese) \times 2 (uncommon vs. common choice) crosstabs replicated Kim and Markus (1999) overall results, $\chi^2(1, N = 729) = 10.18, p = .001, V = .12$, 95% confidence interval (CI) for $V = [.05, .19]$. The US participants showed a clear preference for the uncommon option (62.53%), whereas Chinese participants' choice pattern resembled the flip of a coin (50.00%).² However, comparing the effect size of the present study ($V = .12$, 95% CI for $V = [.05, .19]$) with that of the original ($V = .52$, 95% CI for $V = [.26, .78]$) revealed that the current effect was significantly weaker, $Z = 3.01, p = .003$, with the 95% CIs for the effect sizes not overlapping across these studies.

Interestingly, chi-square analyses comparing the proportion of participants who selected the uncommon option in the present (vs. original) study revealed one salient discrepancy. In the original study, only 24.14% (95% CI = [12%, 42%]) of the East Asian participants selected the uncommon option, whereas 50.00% (95% CI = [44%, 56%]) of the Chinese participants in the present study made such a choice. As predicted, these proportions differ significantly, $\chi^2(1, N = 259) = 6.91, p = .009, V = .16$, 95% CI for $V = [.04, .29]$, with no overlap in the 95% CIs for effect sizes or binomial probabilities. Yet, the 74.07% (95% CI = [55%, 87%]) of European American participants who selected the uncommon option in the original study do not differ significantly from the 62.53% (95% CI = [58%, 67%]) of US participants who made such a choice in the current research, $\chi^2(1, N = 526) = 1.47, p = .225, V = .05$, 95% CI for $V = [.00, .14]$.

As a conservative robustness check, we restricted our sample to participants whose current nationality matched their country of birth ($N = 519$; $N_{China} = 96$; $N_{US} = 423$), which did not change the nature of the results.³

Discussion

The present high-powered study conceptually replicates the original findings from Kim and Markus (1999; Study 3) in terms of the overall pattern of results, such that US (vs. Chinese) participants were significantly more inclined to select an uncommon choice alternative. Specifically, when facing a choice situation between four common pens and one uncommon, US (vs. Chinese) participants were more likely to favor the uniquely colored pen. However, our obtained effect size is significantly weaker than that of the original study, and the 95% CIs for the effect sizes obtained in the current (vs. original) study do not overlap. Notably, our effect size (synonymous with $r = .12$) represents a small effect by conventional standards (Funder & Ozer, 2019), whereas the initial effect size represents a very large effect ($r = .52$).

The discrepancy in effect sizes in our study and that of Kim and Markus (1999) may reflect the results of recent large-scale replications, where replications tend to yield only 25% as large effect sizes as those obtained in original studies (Klein et al., 2018). However, this discrepancy may also have

occurred due to our more subtle, textual presentation format and a possible reduction in the perceived vividness of the available choice options, resulting in smaller effect sizes. Another potential explanation relates to sample characteristics, with all Chinese participants understanding and replying to our survey in English, and with the US participants likely constituting a more heterogeneous sample, not solely comprised of European Americans. Potentially, an ideal sample would need to be based not only on country of birth, but also on nationality, country of residence, first language, and age or generation to study our overarching topic in a more nuanced way. Still, the possible bias source of our sample selection criteria cannot fully explain our results, given that our robustness check, in which participants' current nationality matched their country of birth, produced comparable results as those presented in our main analyses.

As expected, the responses displayed by the Chinese participants in the current study differ significantly from those in Kim and Markus (1999). Over the last decades, China has faced tremendous transformations, with GDP growth moderating shifts in Big Five personality traits (Peng & Luo, 2021). Our findings add to this growing body of literature, suggesting that globalization could influence the dominant self-construal in cultures traditionally characterized by an interdependent self-construal. Supporting this notion, Cai et al. (2018) found that Chinese participants demonstrated an increased need for uniqueness, a trait associated with independent self-construal, in response to social and economic changes. Similarly, Huntsinger et al. (2019) found Armenian adolescents living in urban areas to score higher on a measure of independent self-construal and lower on interdependent self-construal than their peers living in rural areas; interestingly, city dwellers reported higher Internet use and were also able to name more Western singers. Moreover, Hansen et al. (2012) found that Ethiopian children who had a working laptop exhibited higher levels of independent self-construal than their peers who had a broken or no laptop. In addition, their stronger individualistic values were mediated by independent self-construal. Thus, it is plausible that people in cultures where interdependent rather than independent self-construal is dominant may be more strongly influenced by global social media platforms, thereby shifting their self-construal to becoming more independent.

Ads featured in US media have traditionally prioritized individualistic values, whereas those in East Asian cultures have focused more on group benefits, with such differences being particularly pronounced for public rather than private goods (Han & Shavitt, 1994). Our results suggest that marketing managers, advertisers, and brand owners may have to reevaluate their strategies and promotion efforts, possibly by emphasizing more individual benefits in cultures that have traditionally been associated with interdependent self-construal. Supporting this notion, Zhang (2010) found Chinese Generation X consumers, aged 18–35, to be equally persuaded by ads featuring individualistic and collectivist values, whereas their older peers were more easily persuaded by ads featuring traditional collectivist values in the public goods domain. Some marketers have already started leveraging these changing cultural values. For example, ads targeted at younger (vs. older) consumers in China feature more individualism (Zhang & Shavitt, 2003). Given that basic demographic data are readily available from consumers' digital footprints and that commercial appeals tailor-made for consumers with a specific demographic profile are more persuasive (Matz et al., 2017), marketers may want to align their communication tactics with these changing cultural values.

Notes

1. The interpretation of these findings has been debated. For example, Yamagishi et al. (2008) argued that culture-specific preferences for uniqueness (Kim & Markus, 1999) are simply strategies employed to achieve the most favorable outcome in a given setting, with default settings varying across cultures. Thus, although Japanese participants were less likely to choose a unique pen color in the “default setting” than their American counterparts, they were equally likely to do so when they were not concerned about the reactions of others—when they were informed that no one would choose a pen after them or that they were buying a pen in a store. The likelihood that the American participants selected the unique option was similar to that of Japanese participants.

when they were informed that they would be the first of five people to select a pen. This suggests that considering the reactions of others plays a critical role in decision-making in the unique (vs. common) context (Yamagishi et al., 2008).

2. Consistent with Kim and Markus (1999), participants' gender was unassociated with pen choice, and controlling for this demographic variable in the analyses did not change the nature or significance of our results.
3. The fact that there was a larger proportion of Chinese (vs. US) participants whose country of birth did not match their current nationality can potentially be seen as a further validation of our main thesis that there have been more cultural changes in China than in the US during the last decades.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data Availability Statement

The data described in this article are openly available in the Open Science Framework at <https://osf.io/tdfv5>

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This article has earned the Center for Open Science badges for Open Data and Open Materials through Open Practices Disclosure. The data and materials are openly accessible at <https://osf.io/tdfv5>.

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