

Feeling Watched? The Impact of Social Eyes on Self-Perception

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Abstract

Studies have highlighted the differences in self-perception between cultures that emphasize independence and interdependence in the West and East, respectively. Specifically, East Asians show relatively more interdependence – or less independence – than European Americans. Variation in self-construal could be shaped within and through social interactions, and may be particularly pronounced when people perceive others watching them. In this study, we tested this possibility by measuring levels of independence and interdependence for 100 European American and 80 Asian American participants while exposed to a set of schematic faces or non-face shapes. Results of our study indicate that Asian Americans show more interdependence, or less independence, in the schematic face condition than in the non-face condition. In contrast, European Americans were more independent than Asian Americans regardless of the condition they were tested in. The discussion focuses on potential mechanisms of these effects, and addresses limitations and future directions of this work to further investigate the impact of social and cultural context in the formation of self-construals. This study contributes to our understanding of the effects of “watching eyes” on expression of the self in relationship to culturally determined values, and highlights the importance of considering self-construal as both separate and combined constructs of independence and interdependence.

Keywords: self-construal, self-perception, social cues, watching eyes, culture

Feeling Watched? The Impact of Social Eyes on Self-Perception

How does “feeling watched” affect our self-perception? Prior studies have brought to attention the impact that social eyes can have on sensitization to social norms. While some social norms, such as those encouraging prosocial behavior, are relatively common across cultures and expected to be positively influenced by exposure to social eyes (Bateson et al., 2006; Haley & Fessler, 2005; Kelsey et al., 2018; Rigdon et al., 2008), other norms are culture-specific. Notably, Western cultures emphasize independence, with a view of the self as separate and unique, whereas many non-Western cultures show interdependence between the self and others. Variance in responses to social cues depending on social context suggests a possible role of social cues in the expression of the self (Kitayama et al., 2022; Markus & Kitayama, 1991); however, little research focuses on the effect of social eyes on culture-specific self-perception. Does the feeling of being watched differentially impact Westerners and non-Westerners to show greater levels of independence and interdependence? This study aims to explore the effects of social setting on expression of the self in relationship to culturally determined values.

How the self is perceived and portrayed differs by culture. When asked to describe themselves, East Asians tend to focus more on their social role manifested in concrete behaviors than European Americans, who list personality traits and other psychological characteristics (Cousins, 1989). These differences are tied to culturally prevalent views of the self. In Western cultures, the self is primarily conceptualized as independent, with an emphasis on individual autonomy and differences (Markus & Kitayama, 1991). People view the self as stable across contexts and hence choose more generalizable terms to describe themselves. On the other hand, East Asian cultures primarily view the self as interdependent, showing sensitivity to others and tendencies to view oneself as embedded in the holistic social context (Kitayama et al., 2022;

Markus & Kitayama, 1991). Thus, they focus on their relationship to others and use relational terms to describe themselves. In social settings, collectivist cultures engage in behavior to fit in with others through expression of emotions that matches the situation rather than as a reflection of personal affect (Kitayama & Markus, 1997). Cultural differences in self-perception can be broken down by measuring to what extent people agree to items such as “It is important to me to respect decisions made by the group,” an indicator for interdependence, and “I enjoy being unique and different from others in many ways,” an indicator for independence (Singelis, 1994). Using this 24 item Self-Construal Scale and other versions of it (e.g., Park & Kitayama, 2014), it is possible to measure to what extent an individual perceives the self as in- and interdependent. Further evidence that the perception of the self is directly tied to one’s cultural identity comes from Rhee and her colleagues (1995). In their study, researchers asked European Americans, Asian Americans, and Koreans to describe themselves. They found that the more Asian Americans spontaneously listed their ethnic background, the more they focused on social rather than autonomous aspects, resembling Korean responses. Similarly, those Asian Americans who did not mention their ethnicity at all described themselves similarly to European Americans. This suggests that our surroundings and the cues it conveys to us can affect the way we perceive ourselves.

One mechanism by which our surroundings may shape us is social feedback; specifically, social norms defined within a culture may have an ability to influence the perception of self (Kitayama & Salvador, 2017). Expectations within society set implicit rules for the expression of the self, resulting in positive feedback for alignment to norms and negative responses for deviation. Research by Kitayama & Salvador (2017) suggests that feedback from social others can reinforce psychological responses, shaping self perception to be consistent with culturally

shaped norms. Active engagement with the environment with continuous positive feedback for norm-guided expressions of the self will result in strengthened alignment of self-perception and behavior with societal norms. For instance, Latin cultures emphasize interdependent values similarly to Asian cultures, but norms that promote social connection results in an expectation for emotional expressivity (Kitayama & Salvador, 2017; Kitayama et al., 2022). On the other hand, falling short of cultural expectations to show norm-incongruent actions may lead to negative feedback from social others, discouraging one to repeat that behavior. This suggests that expressions of the self may be shaped by reinforcement of behavior by culturally-formed social norms and feedback from others.

Social norms may be more or less apparent depending on the setting: Existing evidence indicates that even the perception that someone is watching makes norm-consistent behaviors more likely (Bateson et al., 2006). Utilizing the “watching eyes” paradigm, where participants are subtly exposed to face-like stimuli, it is possible to test the unconscious effect that social observation has on behavior (Kitayama et al., 2004; Bateson et al., 2006). Under conditions where participants feel that someone is watching them, people show increased prosocial behaviors regardless of anonymity (Bateson et al., 2006; Haley & Fessler, 2005; Kelsey et al., 2018). These positive behaviors align with culturally constructed social norms that are generally reinforced by approval from others. Another study showed that even the presence of weak social cues such as a configuration of two dots above a single dot is enough to create a perception of a face, promoting charitable giving and cooperation (Rigdon et al., 2008). This expression of prosociality can be attributed to the importance of reputation management, especially in the public setting (Haley & Fessler, 2005; Kelsey et al., 2018). Following expectations defined by social norms becomes important, as deviation from perceived public expectations increases the

risk of social repercussions. As a result, prosociality may be expressed highly to display the self to others in a more positive light. Concern to uphold one's reputation in the presence of social cues (i.e. watching eyes) therefore results in a change in behavior to align with social norms (Dear et al., 2019).

Further research suggests that differences in self-perception between the West and non-West may be related to responses to social norms. Utilizing the "watching eyes" paradigm, Kitayama and his colleagues (2004) demonstrated that Japanese participants rationalized their choices in the presence of social cues, while European Americans justified their choices in both present and absent conditions. This result from Japanese participants, according to researchers, likely reflects a desire to adhere to the cultural norm of maintaining harmony. Because the views of others are important in interdependent culture, people may feel the need to justify their choices to better align to the social expectations to not stand out. In contrast, it is possible that for independent cultures, showing the uniqueness of a choice may reinforce individualistic self-perception encouraged by societal norms.

These results show that the perception that someone is watching can differentially impact behaviors and expression of the self for people with Western and East Asian backgrounds. This raises a possibility that the presence of watching eyes could have an impact on the expression of the independent or interdependent self to increasingly align with values set by social norms, which this study aims to investigate. When social cues are present, East Asian cultural emphasis on embeddedness and fitting into the social context may result in expressing more relational values and humility, while Western cultural focus for self-expression and highlighting differences may result in showing more autonomy. Thus, we hypothesize that the presence of social eyes will lead to diametrically opposite effects on the experience of the self between

European-Americans and Asian Americans; Westerners will exhibit more independence and non-Westerners will show more interdependence in the perception of social cues.

Method

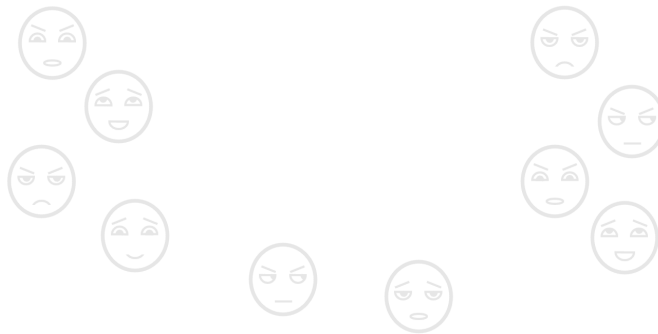
Participants

College undergraduate students from the University of Michigan who identify as European American or Asian American (specifically focusing on students with an East Asian background) were recruited for this study from an Introductory Psychology course and student organizations. European Americans typically perceive the self as primarily independent, whereas East Asians tend to focus more on the interdependence of the self (Markus & Kitayama, 1991). In exchange for participation, students received credit towards a course requirement, or, if recruited from a student organization, were given a \$4 compensation. A priori power analysis suggested that a sample size of 171 will give us a power of 0.9 to detect a medium effect given the 2 x 2 design (Culture x Condition). We aimed to oversample by about 15% per group.

A total of 190 surveys were completed with an average response time of 473.9s and median of 358s. Ten responses were excluded due to not fitting criteria. Of these, six responses did not meet culture criteria (European American or Asian American). While we asked participants to not use a smartphone for the study since it does not display the survey background – our prime manipulation – correctly, four participants used a smartphone nonetheless and were thus excluded. There were no outliers for response time, as no participants took longer or less time than 1.5 times the IQR, IQR = 289.2, 451.2 we pre-registered as an exclusion criterion. 80 participants identified as East Asian or Asian American, and 100 identified as European American. Participants' ages ranged from 18 to 24, with a mean age of 18.88 and $SD = 1.03$. Of the total 180 participants, 61.67% identified as female, 37.78% as male, and .56% as "other."

Procedure

We conducted this study in two settings: First, participants took part within a computer lab setting, where each had their own cubicle to work in, however, recruitment proved challenging. We then switched to a classroom setting, where no more than four participants each sat at their own desk facing a wall. After informed consent, participants were randomly exposed to one of two survey backgrounds to suggest public vs. private behavior (Figure 1). In the private condition, the background featured several balloons. In the public condition, the background looked similar overall, but showed faces with ‘watching eyes’ instead of balloons. While seeing this background, participants completed a self-construal scale to measure their levels of independence and interdependence (Singelis, 1994; Park & Kitayama, 2014). According to Kitayama et al. (2004), even a stimulus featuring schematic eyes on a poster in the participant’s line of sight is sufficient to evoke a “social” context, where one perceives the presence of “watching eyes.”

Figure 1*Control Balloon Condition**Experimental Face Condition*

Following this procedure, the background switched to a neutral white background regardless of condition and participants completed the Trend Reversal Task (Ji et al., 2001), an instrument designed to measure holistic vs. analytic cognition. They subsequently answered demographic questions, such as regarding their age, gender, and level of education, and upon completion of the survey, were fully debriefed. All study procedures were approved by the IRB for this computer-based lab study run at the University of Michigan.

Self-Construal Scale

The 20-item Singelis Self-Construal Scale was used to measure participants' level of independence and interdependence (Park & Kitayama, 2014). On a 7-point scale from 1 to 7,

with 1 = *strongly disagree* and 7 = *strongly agree*, participants rated their level of agreement with statements such as, “*I enjoy being unique and different from others in many respects,*” and “*I avoid having conflicts with members of my group*” to measure their independence and interdependence, respectively. The independence and interdependence subscales both consisted of 10 items, and we calculated independence and interdependence scores by averaging across the items of each subscale.

In addition to scores for each subscale, we calculated self-construal (SC) difference scores by subtracting the score for independence from the score for interdependence for each participant. Higher scores indicate relatively higher levels of interdependence.

Trend Reversal Task

Participants completed the Trend Reversal Task (Ji et al., 2001), an instrument designed to measure holistic vs. analytic cognition. Participants estimated the chance for trends to change across 4 statements such as “*Two girls, Sue and Linda, are fighting at kindergarten. How likely is it that they will become best friends someday?*” on a scale from 0 to 100 percent. We averaged across their four responses to get a score for trend reversal, with higher scores indicating a higher perceived likelihood for trends to change. Trend reversal has been found as a feature of holistic cultures, such as in East Asia, while Western thought may lean more towards stability of trends in events (Ji et al., 2001).

Data Analysis

We analyzed the data using RStudio (R Core Team, 2022). The study design was preregistered on AsPredicted (<https://aspredicted.org/dc5fy.pdf>) prior to data collection. To test whether the background had an effect depending on cultural background, we ran 2x2 ANOVAs to predict independence and interdependence scores by condition and culture. Following this, we ran a similar analysis with SC difference scores as noted in our pre-registration. This analysis was supplemented with an ANCOVA with trend reversal scores as an additional covariate.

Results

Since the background manipulation might affect some items of the scale more than others, we calculated Cronbach's alpha for each subscale separately for each condition. The independence subscale showed good internal consistency with $\alpha = 0.8$, and $\alpha = .75$ for the control and experimental condition respectively. The interdependence subscale showed mostly acceptable internal consistency with $\alpha = .66$ and $\alpha = 0.7$ for the control and experimental condition, respectively.

Correlations between mean levels of independence, interdependence, SC difference scores, and the trend reversal task (TRT) are shown in Table 1. There is a significant negative correlation between independence and interdependence scores, implying that more independent self-perception is related to lower levels of interdependence. TRT did not have any correlation to SC nor independence and interdependence subscales.

Table 1*Correlation Matrix*

	1	2	3	4
1. Independence	--			
2. Interdependence	-.39***	--		
3. Self-Construal (SC)	-.86***	.81***	--	
4. Trend Reversal Task (TRT)	.02	.08	.03	--

Note. *** $p \leq .001$

Independence & Interdependence Subscales

Though our pre-registration focused on SC difference scores, we first focused on the effect of background manipulation on independent and interdependent scores to explore the effects of social priming based on culture.

ANOVA analysis of the independence subscale showed a main effect of culture on independence scores, $F(1, 176) = 7.16, p = .008$, as shown in Figure 2. Though the effect of condition was non-significant, $F(1, 176) = 1.80, p = .18$, there was an interaction between culture and condition, $F(1, 176) = 5.40, p = .02$.

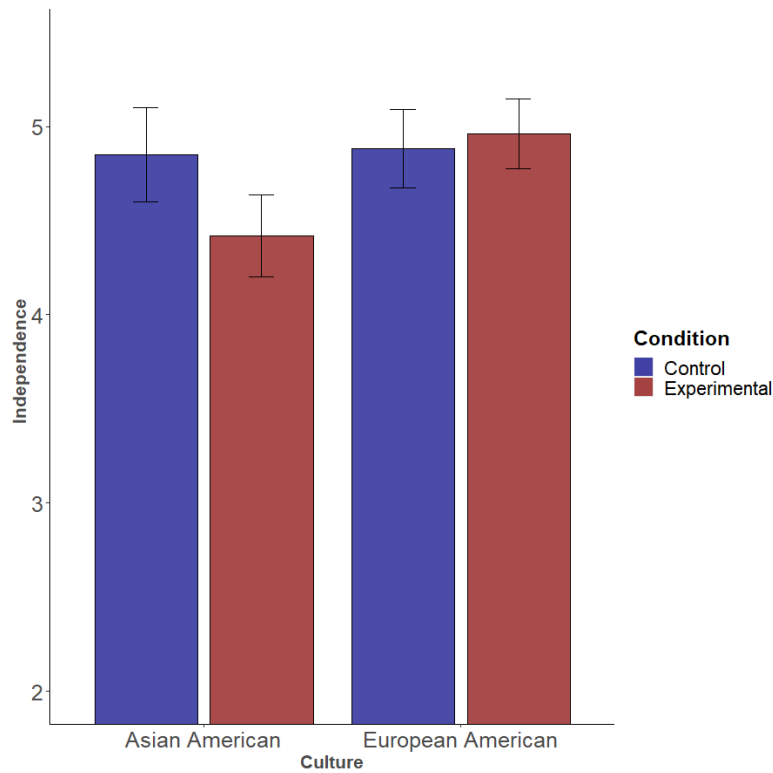
Pairwise comparison of condition by culture showed that Asian Americans reported significantly lower independence when exposed to faces vs. balloons, $t(176) = 2.63, p = .009$. Independence scores of European Americans did not differ by condition, $t(176) = -.55, p = .58$, as shown in Figure 2. Independence scores of Asian Americans and European Americans did not differ when exposed to balloons, $t(176) = -.21, p = .83$, but Asian Americans reported significantly less independence than European Americans when exposed to faces,

$t(176) = -3.52, p < .001$.

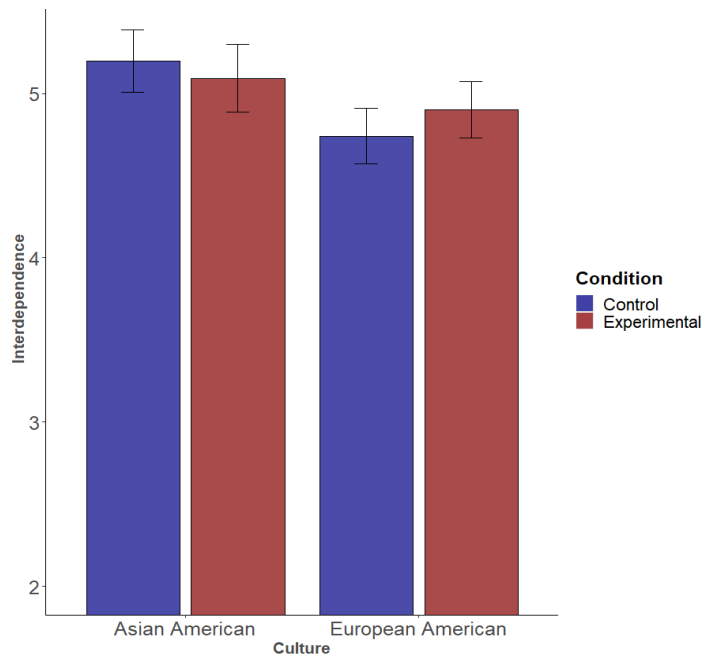
This pattern was somewhat mirrored for the interdependence subscale: an ANOVA showed a main effect of culture on the interdependence scores, $F(1, 176) = 11.75, p < .001$, shown in Figure 3. While the effects of condition, $F(1, 176) = .22, p = .64$, and condition by culture were not significant, $F(1, 76) = 2.01, p = .16$, pairwise comparison of culture by condition showed that Asian Americans reported significantly higher levels of interdependence than European Americans when exposed to balloons, $t(176) = 3.41, p < .001$. This difference was no longer significant when participants were exposed to faces, $t(176) = 1.44, p = .15$.

Figure 2

Independence Subscores for Different Conditions



Note. Independence subscores of Asian American and European Americans are shown for Control and Experimental conditions. (Error bars show confidence intervals)

Figure 3*Interdependence Subscores for Different Conditions*

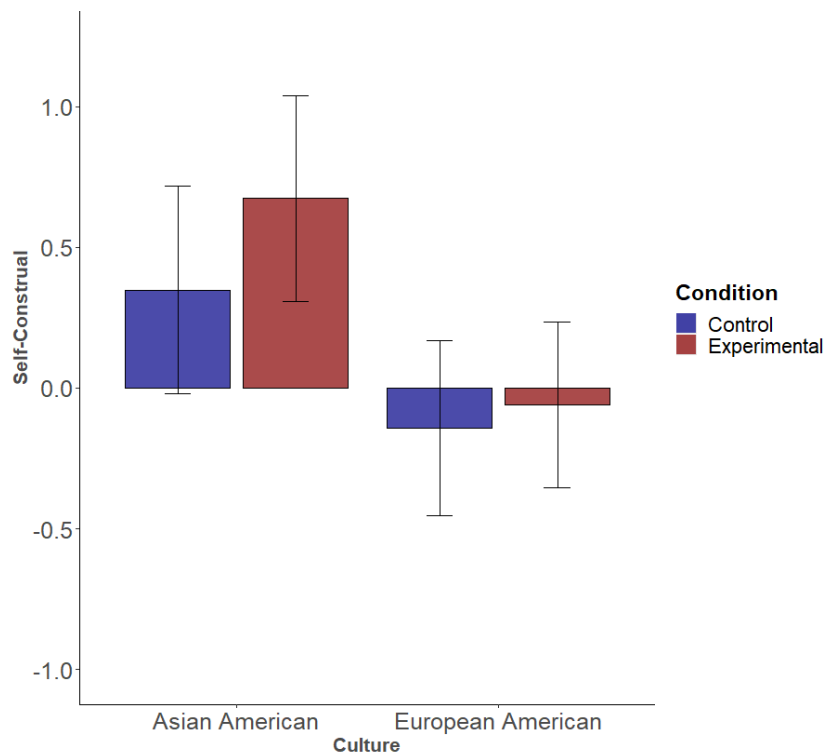
Note. Interdependence subscores of Asian American and European Americans are shown for Control and Experimental conditions. (Error bars show confidence intervals)

Additional Analyses - SC

ANOVA & Distribution

In addition to the study design, we also preregistered analyses focusing on self-construal difference scores – calculated by subtracting independence scores from interdependence scores. We expected to see greater difference in SC difference scores between control and experimental condition with opposite effects by culture; European Americans and Asian Americans were respectively predicted to show lower and higher SC difference scores in the face condition relative to the balloon condition. However, reflecting upon the expected pattern of the data, such differences could be driven by either subscale, which led to us focusing on the two subscales

instead. Nonetheless, we still ran the pre-registered analyses: To test whether the face vs balloon priming had an effect on SC by culture, we ran a 2x2 ANOVA. Distribution of these means are depicted in Figure 4. We found a main effect of culture, $F(1, 176) = 13.14, p < .001$, with the lower SC scores of European Americans indicating relatively more independence. The background appeared to have no effect on the SC difference scores, $F(1, 176) = 1.26, p = .26$, and there was no interaction between culture and condition, $F(1, 176) = .51, p = .48$. Pairwise comparisons with corrections for multiple comparisons using the Holm-Bonferroni method revealed that Asian Americans reported a significantly more interdependent self-construal than European Americans regardless of condition (Figure 4), $t(176) = 2.03, p = .04$ and $t(176) = 3.07, p = .003$ for the control and experimental condition, respectively.

Figure 4*Self-Construal Difference Scores for Different Conditions*

Note. Self-Construal difference scores of Asian American and European Americans are shown for Control and Experimental conditions. (Error bars show standard errors)

ANCOVA

We ran an ANCOVA to test if the effect of culture or condition remains after controlling for TRT. TRT appears to have a relatively small, if any, effect on SC; $F(1,176) = .48, p = .49$. There is a significant difference in self-construal means between Asian American and European American participants; the main effect of culture, $F(1, 176) = 13.10, p < .001$, remains after controlling for TRT. There is still no observed effect of condition on SC, and no interaction between culture and condition variables.

Discussion

The aim of this study was to investigate the impact of watching eyes on self-perception. We hypothesized that the presence of social eyes would result in opposite effects on self-perception depending on culture. Specifically, we predicted that European Americans would show greater levels of independence and Asian Americans would show more interdependence when watching eyes are perceived. Investigation into the subscales of independence and interdependence revealed that priming had a differing effect for each culture. Asian Americans reported lower levels of independence, or relatively greater interdependence when exposed to social cues compared to the control condition, suggesting a potential suppression of independent tendencies when reminded of social norms. In East Asian cultures, there is a cultural emphasis on embeddedness, with a desire to fit into the holistic social context to maintain social harmony (Kitayama et al., 2022; Markus & Kitayama, 1991). The presence of watching eyes may push Asian Americans to emphasize these cultural values; they may suppress self-assertion in order to uphold a certain reputation within society by aligning with culturally-guided expectations of self perception (Dear et al., 2019; Kelsey et al., 2018; Kitayama et al., 2004; Kitayama & Salvador, 2017). It is possible that this same motivation to align to social expectations could be driving the consistency in levels of interdependence among Asian Americans across conditions; they may be keeping adhering to societal norms in an effort to fit in to the social context, thus repressing an increase in levels of interdependence in the presence of social cues. Contrastingly, European Americans showed no significant difference in levels of independence between the two conditions, suggesting that social norms in the West may not discourage self-expression for the sake of fitting in. They also show consistent levels of interdependence, with relatively lower interdependence than Asian Americans based on SC

difference scores, supporting the idea that regardless of the social cues present, European Americans may place an emphasis on exhibiting themselves as independent and unique (Markus & Kitayama, 1991).

Studying the SC difference scores suggested priming had no effect - Asian Americans showed relatively greater levels of interdependence than European Americans regardless of condition with no difference between conditions regardless of culture. Crucially, levels of independence between European Americans and Asian Americans were comparable in the control condition and did not drive the observed difference in SC difference scores. When social cues were present, Asian Americans showed lower independence, resulting in relatively higher (more interdependent) SC difference scores. This pattern was mirrored for interdependence; levels of interdependence between European Americans and Asian Americans were significantly different in the control condition, resulting in relatively higher (more interdependent) SC difference scores for Asian Americans, however, no difference was observed in the experimental condition. The priming had different effects for each cultural group with suppression of the self's uniqueness for Asian Americans and a trend towards more social awareness and focus for European Americans, as highlighted by the non-significant difference between racial groups in the experimental condition.

Focusing on the SC difference scores masked the differing effect observed in the independence/interdependence subscores. Thus, our study highlights the necessity to break down self-construal into independent and interdependent subscale measurements; considering these as separate but related constructs of self-perception may allow for better understanding of the effects of culture and condition on differences in expression of the self. Our results provide partial support for our initial hypothesis, indicating that watching eyes do influence Asian

Americans to show lower levels of independence, suggesting relatively greater levels of interdependence focused on social harmony and connectedness. European Americans did not show relatively more focus on self-expression in the presence of social cues, however, they also did not show the same decrease as Asian Americans, indicating the importance of self-expression no matter the social context.

Some limitations of the study need to be considered. First, we switched the study mode during data collection. For one part of the study, participants took part in the study in individual cubicles, while later on, a majority of participants completed the survey in a classroom setting with a maximum of three others present in the room. Given that the priming focused on social exposure through “watching eyes,” this mode may have affected the effects of the priming. Additionally, this study may be limited by the nature of explicit measurements of self-construal. Participants’ subjective response to a hypothetical prompt may differ from how they would react if they encountered the situation in their daily lives. Additionally, it may be insightful to investigate the differences in self-perception within the East Asian vs European American populations. A past study by Heine & Hamamura (2007) found that Asian Americans show levels of self-enhancement in between Westerners and East Asians, presenting a possibility that Asian American participants may have adopted some Western ideals depending on the length of time they have lived in the United States due to acculturation.

Currently, results of this study are limited in generalizability, and focusing on wider populations may allow for greater insight into the impacts of social cues. Additionally, future research may focus on why European Americans appear to have a relatively lower sensitivity to social cues for expression of self-construal than Asian Americans. However, overall, this study contributes to a cross-cultural understanding of self-perception in the absence and presence of

social cues, and highlights the necessity to consider self-construal on both separate and combined constructs of independence and interdependence.

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