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# Mirrors in the Head: Cultural Variation in Objective Self-Awareness

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*In a society where there are pronounced concerns for “face,” people come to be especially focused on how they are being evaluated by others. We reasoned that Japanese should conceive of themselves in terms of how they think they are considered by others. This hypothesis was tested by contrasting Japanese and North American participants who were in front of a mirror with those who were not. In two studies, replicating past research, North Americans who were in front of a mirror were more self-critical and were less likely to cheat than were those who were not in front of a mirror. In contrast, Japanese participants were unaffected by the presence of the mirror.*

**Keywords:** *culture; self-awareness; self-enhancement; Japanese; antisocial behavior*

Cultural psychology maintains that the self and culture are mutually constituted—they make each other up (Shweder, 1990). This position has been the subject of much empirical research that seeks to demonstrate the ways that cultural experiences are embedded in the experience of the self. To explore this, researchers typically contrast the nature of the self-concept across cultures; in particular, much research has contrasted self-concepts common in East Asian contexts with those common in North American contexts (Cousins, 1989; Heine, 2001; Markus & Kitayama, 1991).

One perspective that has guided this cross-cultural research has been the notion that in East Asian contexts, where concerns with the evaluations of others, or “face,” are heightened, people are more attentive to how they imagine they appear to others than they are in more-individualistic, North American contexts (Heine, 2005; Heine, Lehman, Markus, & Kitayama, 1999). In Japanese contexts, for instance, people are said to chronically attend to society’s gaze (*seken*), an orientation internalized through socializing experiences that direct their attention to how they appear to authority figures and to society at large (McVeigh, 2000, 2002). When Japanese people consider themselves, then, they are likely to imagine how they appear to their *seken*.

A number of recent investigations have documented how East Asians attend more to the perspective of others than Westerners do. For example, Cohen and Gunz

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(2002) demonstrated that East Asians are more likely than Westerners to use a third-person perspective when recalling memories of themselves when they were at the center of attention. Apparently, East Asians' attention to an audience leaked into and distorted their memories of themselves. It is important to note that such third-person memories were not more common among Asians for memories in which they were not the center of attention, and thus when they should not have been considering an audience. Likewise, other research has found that East Asians are more accurate than Westerners at identifying when a listener will recognize a tune that they are tapping out with their fingers, apparently because they are better able to take on the perspective of their listeners (Cohen, Hoshino-Browne, & Leung, 2007). Similarly, East Asians outperformed Westerners on a visual perspective-taking task, making fewer visual fixations on objects that were not visible to a person who was giving them instructions (Wu & Keysar, 2007). All of these findings converge with the notion that East Asians habitually attend to the perspective of others more than Westerners do (Cohen & Hoshino-Browne, 2005; Leurs & Sonoda, 1999).

The self-concept is a unique entity in that it can be considered from the perspective of both a subject and an object. Objective self-awareness theory argues that either people can be in a state of subjective self-awareness, in which their attention is directed away from the self and individuals take on the perspective of themselves, or they can be in a state of objective self-awareness (OSA), in which their attention is focused on themselves, thereby considering themselves in the way that they consider other objects in their lives (Duval & Wicklund, 1972). These are said to be two mutually exclusive states, although the individual can oscillate quickly between them. When people are confronted with stimuli that turn their attention to themselves, such as seeing themselves in a mirror or hearing their tape-recorded voice, they are more likely to enter a state of OSA. One consequence of being in a state of OSA is that people become more aware of their internal standards, which serves to highlight discrepancies between the ideal self and the actual self (Silvia & Duval, 2001).

An awareness of internal standards tends to lead to two common reactions. First, this awareness is associated with decreases in positive self-feelings as people consider how far they fall short of their standards (Fejfar & Hoyle, 2000; Moskalkenko & Heine, 2003; but see Duval & Silvia, 2002, for a more detailed discussion). Attempts to develop an explicit measure of state self-awareness (vs. trait self-consciousness; see Fenigstein, Scheier, & Buss, 1975) have thus far not succeeded (Prentice-Dunn, 1991), and investigations of self-awareness have relied on a wide array of experimental manipulations, including participants' (a) being presented with a video image of

themselves (Duval, Duval, & Neely, 1979; Storms, 1973), (b) hearing an audio recording of their voices (Ickes, Wicklund, & Ferris, 1973), (c) being in the presence of a video camera that is pointed at them (Duval, Duval & Mulilis, 1992; Federoff & Harvey, 1976), (d) writing their autobiography (Duval et al., 1979), or (e) being put in front of a mirror (Hass & Eisenstadt, 1990). A meta-analysis (Fejfar & Hoyle, 2000) revealed a consistent effect of self-awareness on negative affect across 79 studies that manipulated self-awareness. Dwelling on themselves as objects appears to make individuals aware of how they fall short of their ideals, thereby leading to more-negative self-views. As being reminded of one's self-discrepancies is unpleasant, the state of OSA is avoided whenever possible (Csikszentmihalyi & Figurski, 1982), as are the stimuli promoting it (Duval & Wicklund, 1972).

A second reaction to a heightened awareness of one's standards is that people will often take action to ensure that they are acting in line with those standards. That is, people are more likely to act in normative ways when they are thinking about their standards, particularly if they have been placed in a state of OSA. For example, research has found that children are less likely to take extra Halloween candy (Beaman, Klentz, Diener, & Svanum, 1979) and college students are less likely to cheat on a task (Diener & Wallbom, 1976) when they are in front of a mirror. Although people may sometimes behave in unethical ways when they can direct their attention away from themselves, it is particularly distressing to act in antinormative ways when one is considering one's internal standards (Bersoff, 1999). People should thus act in more prosocial ways when in a state of OSA.

The vast majority of research on self-awareness has thus far been limited to individualistic cultures and hence has also been largely limited to the experience of self that is most common in those cultures. It is not clear how well the well-documented reactions that people have to stimuli that prompt OSA would generalize to other cultures (for discussion see Norenzayan & Heine, 2005).

There are good theoretical reasons to suspect that the typical reactions to OSA-inducing stimuli might vary across cultures. In many ways, in a cultural context in which one is interdependent with others in important ways, such as in much of East Asia, the view of self that matters more is how *others* view the individual, rather than how the individual views himself or herself. To the extent that East Asians are more likely to attend to how they appear to others, it follows that they should more habitually be in a state of OSA compared with North Americans. That is, the ways that East Asians conceive of themselves should be influenced by the ways that they think others conceive of them (Cohen et al., 2007; Heine, 2005). If this is the case, East Asians should be

less influenced than North Americans by stimuli that enhance OSA, such as mirrors or video cameras. This would be expected to the extent that their default way of thinking of themselves already is shaped by their imagined perspective of others.

We were able to find two studies that explored the effects of OSA on self-ratings in Japan. In neither of these did the Japanese data replicate the Western pattern of effects of increased self-discrepancies when a camera was directed toward them (Mizuta, 1986, 1987), although these null results were not considered in terms of potential cultural influences. These findings are consistent with our predictions.

We conducted two studies to investigate whether the presence of mirrors led to the same consequences for Japanese as they do for North Americans. We hypothesized that although North Americans should respond to the presence of mirrors in the ways that have been found in past research, the presence of a mirror should have little impact on the responses of Japanese.

## STUDY 1

### Method

**Participants.** The American sample consisted of 64 students from the University of Pennsylvania, and the Japanese sample consisted of 60 students from Kurume University in Fukuoka prefecture. Both samples consisted of students in introductory psychology courses.

**Procedure.** Students completed two questionnaires in two separate rooms. After they had completed the first questionnaire in the first room, they were told that the room was needed by someone else and that they would have to move to a second room to complete the subsequent questionnaire. In one of the rooms, participants were seated in front of a 60-cm-by-90-cm mirror mounted on the wall. Participants were told that the mirror was there for an unrelated study on self-portraits. Half of the participants were taken first to the room with the mirror and then to the room without the mirror. The other half of the participants were taken to the rooms in the opposite order.

**Materials.** The first questionnaire was very brief and consisted of a variant of the Twenty Statements Test (Kuhn & McPartland, 1954). Specifically, participants were asked to complete 10 statements that began with the stem "I am . . ." with adjectives that best described themselves. Following this, they were asked to complete a similar set of 10 statements that began with the stem "I would ideally like to be . . ." with adjectives that best described the person they ideally would like to be.

The statements in these two lists were compared by first checking with Roget's Thesaurus (1996) to calculate the number of statements in their "ideal self" list that were either synonyms or antonyms of the statements that were listed in participants' "actual self" list. Actual-ideal self-discrepancies were calculated in the way that they have been in past research with this measure (Higgins, Bond, Klein, & Strauman, 1986), that is, by summing the number of synonyms less 2 times the number of antonyms. This calculation provided an open-ended measure of actual-ideal self-discrepancies.

The second questionnaire consisted of two measures: a closed-ended self-discrepancy measure and a self-esteem measure. Both of these were completed in the second room. The closed-ended self-discrepancy measure consisted of two lists of 20 statements, and participants were asked to rate how accurately these statements described themselves on a scale from 1 (*not at all accurate*) to 5 (*completely accurate*). The first set of statements was with respect to how participants currently viewed themselves. The statements each contained a positive adjective and the modifier "extremely" (e.g., "I am extremely considerate"). The second set of statements was with respect to how participants ideally wished to view themselves (e.g., "I would ideally like to be extremely considerate"). These statements came from an earlier study by Heine and Lehman (1999). The absolute difference scores between participants' "actual self" and "ideal self" ratings were calculated and averaged across the 20 items (Hoge & McCarthy, 1983). This served as the second measure of actual-ideal self-discrepancies. The questionnaire order was fixed for all participants rather than counterbalanced across conditions because it would be problematic for participants to complete the open-ended items after the closed-ended measure as their responses would likely be influenced by what they had indicated in the closed-ended measures.

Following the self-discrepancy measure, participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965), using a 5-point Likert scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

All materials and instructions were originally created in English and then translated into Japanese. Two bilingual translators compared the English and Japanese versions and discussed and resolved any perceived discrepancies.

### Results

The study design included three measures of positive self-views: open-ended self-discrepancies, closed-ended self-discrepancies, and self-esteem. Theoretically these three variables should be correlated. Correlational analyses revealed that the closed-ended self-discrepancy measure significantly correlated with self-esteem ( $r =$

-.20,  $p < .05$ ; a larger self-discrepancy was associated with lower self-esteem); however, the open-ended measure did not correlate significantly either with the closed-ended discrepancy measure ( $r = .11$ , *ns*) or with self-esteem ( $r = -.05$ , *ns*). Because the manipulation occurred immediately following completion of the open-ended questionnaire, the open-ended measure was always completed in a different state (mirror vs. no mirror) than were the other two measures (which were completed together in the other room), and this likely played a role in reducing the magnitude of the correlations with the open-ended measure. Alternatively, the null correlations with the open-ended measure might indicate that it is not a good measure of self-criticism.

Analyses were performed to determine, within each culture, the effects of the mirror on the two measures of self-discrepancies and self-esteem by contrasting the responses of individuals on the basis of whether they had completed those items in the presence of a mirror. First, the effects of the mirror on participants' responses on the open-ended measure of self-discrepancies were analyzed with a 2 (culture)  $\times$  2 (mirror condition) ANOVA. Contrary to our hypothesis, the Culture  $\times$  Condition interaction was not significant,  $F(1, 120) = 1.36$ , *ns*,  $\eta^2 = .01$ . Simple effect analyses revealed that Americans who completed the open-ended self-discrepancy measure in front of the mirror had nominally larger actual-ideal self-discrepancies than those who completed it in the absence of a mirror, although the effect was not significant,  $F(1, 62) = 2.06$ , *ns*,  $\eta^2 = .03$  (see Table 1). For the Japanese, the open-ended self-discrepancy scores did not vary whether they completed the items in front of a mirror or in the absence of a mirror,  $F < 1$ ,  $\eta^2 = .00$ . In sum, although the means were in the predicted direction, none of the effects were significant for the open-ended measure of self-discrepancies.

The effects of the mirror were also investigated in participants' responses to the closed-ended measure of self-discrepancies. A 2 (culture)  $\times$  2 (mirror condition) ANOVA revealed a significant Culture  $\times$  Condition interaction,  $F(1, 120) = 5.74$ ,  $p < .02$ ,  $\eta^2 = .05$ . Simple effect analyses revealed that Americans who completed the measure in front of a mirror had significantly larger discrepancy scores than did those who completed it in the absence of a mirror,  $F(1, 62) = 7.77$ ,  $p < .01$ ,  $\eta^2 = .11$ . In contrast, Japanese who completed the measure in front of the mirror did not differ in their self-discrepancies from those who completed it away from the mirror,  $F < 1$ ,  $\eta^2 = .00$ .

These differences can be further illuminated with a different set of simple effect analyses, which compare the cultures within each mirror condition. First, a comparison of the cultures when people are not in front of the mirror reveals a clear cultural difference,  $F(1, 61) = 15.69$ ,

**TABLE 1:** Effects of Mirror on Self-Assessments (standard deviations in parentheses) for Study 1

Variable	United States		Japan	
	Mirror	No Mirror	Mirror	No Mirror
Open-ended self-discrepancies	2.94 (4.35)	1.36 (4.30)	2.37 (4.52)	2.60 (3.87)
Closed-ended self-discrepancies	1.15* (0.42)	0.86* (0.43)	1.23 (0.33)	1.27 (0.39)
Self-esteem	3.06** (0.97)	3.92** (0.93)	3.23 (0.58)	3.53 (0.69)

NOTE: Larger self-discrepancies (and lower self-esteem) indicate more self-criticism.

\*Difference between mirror conditions is significant at  $p < .01$ .

\*\*Difference between mirror conditions is significant at  $p < .001$ .

$p < .001$ ,  $\eta^2 = .21$ . Replicating previous cross-cultural findings (Heine & Lehman, 1999; Marsella, Walker, & Johnson, 1973), East Asians had significantly larger closed-ended self-discrepancies than did Americans. In contrast, a comparison of the self-evaluations of the cultures when people are in front of a mirror revealed no cultural difference,  $F < 1$ ,  $\eta^2 = .01$ . The cultural differences in self-discrepancies vanish when members of both cultures are considering themselves in front of a mirror.

The effects of the mirror on participants' self-esteem scores were also investigated. A main effect for mirror condition emerged,  $F(1, 119) = 15.59$ ,  $p < .001$ ,  $\eta^2 = .12$ , such that people had significantly higher self-esteem when the mirror was absent ( $M = 3.74$ ,  $SD = 0.84$ ) than when it was present ( $M = 3.14$ ,  $SD = 0.80$ ). This effect was qualified by a marginally significant Culture  $\times$  Condition interaction,  $F(1, 119) = 3.59$ ,  $p = .06$ ,  $\eta^2 = .03$ . Simple effect analyses revealed that Americans reported significantly higher self-esteem when they completed the scale in the absence of a mirror compared with when they were in front of the mirror,  $F(1, 62) = 13.12$ ,  $p < .001$ ,  $\eta^2 = .18$ . Japanese demonstrated a marginally significant trend,  $F(1, 57) = 3.31$ ,  $p < .08$ ,  $\eta^2 = .06$ , where those who completed the scale in front of the mirror had nominally lower self-esteem than those who did not.

These effects can also be further explored by comparing the cultures within each mirror condition. When people completed the self-esteem scales in the absence of a mirror, a cultural difference emerged, with North Americans showing marginally higher self-esteem than Japanese did,  $F(1, 60) = 3.40$ ,  $p < .07$ ,  $\eta^2 = .05$  (although this difference was notably smaller than what typically emerges in cross-cultural comparisons of self-esteem: average  $\eta^2 = .17$ ; Heine & Hamamura, 2007). In contrast, when people rated their self-esteem in front of the mirror, this cultural difference was no longer present,  $F < 1$ ,  $\eta^2 = .01$ . The cultures differ only when people are not in front of a mirror.

In sum, replicating past research (Ickes et al., 1973), Americans overall were more self-critical when they evaluated themselves in front of a mirror than when no mirror was present. This was true for both measures of self-esteem and the closed-ended measure of self-discrepancy. The open-ended measure of self-discrepancy was in the same direction, but it failed to reach significance. It is not clear why the open-ended measure yielded weaker results: typically, OSA stimuli yield stronger effects at the early stages of exposure to them, and the effects get weaker with increased exposure (Ickes et al., 1973). In our case, the people completed the open-ended measure first, so the null effects are surprising. Perhaps the weaker results indicate that the open-ended measure is a less sensitive measure of self-discrepancies than the closed-ended measure is. The null correlations with the other measures of self-assessments support this speculation. We note that past research with self-discrepancies and OSA also used closed-ended measures.

In contrast to the American pattern, the mirror had no significant impact on the ratings of the Japanese participants for any of the three measures; however, the mirror had a marginal impact on Japanese self-esteem, and in the same direction as that of Americans. This latter result might indicate that although Japanese are more likely to be in a state of OSA than Americans are, they are not typically at a ceiling, and that sometimes mirrors influence their self-evaluations as well. In Study 2, we considered whether the weak effects of the mirror on Japanese participants are specific to measures of self-evaluations. We wished to investigate whether Japanese and North Americans would be equally likely to engage in antinormative behaviors (cheating on a task) whether or not they were in the presence of a mirror.

## STUDY 2

### Method

**Participants.** The Canadian sample consisted of 70 students (51 females and 19 males) at the University of British Columbia. Participation was restricted to those who were born in Canada and had English as their first language. The Japanese sample consisted of 62 students (29 females and 33 males) at Yamaguchi University. Students from both samples were students in introductory psychology courses.

**Procedure.** Participants came into a small lab and sat at a desk. Half of the participants were in front of a 60-cm-by-90-cm mirror. Those participants were told that the mirror was part of another study on self-portraits, and they were shown the back of the mirror so that they

knew it was not a two-way mirror. For the other half of the participants, the mirror was not present. Participants were told the study was investigating their "verbal fluidity." They sat at a laptop and were told that they would have 2 min to type in as many emotion words as they could come up with. Participants were informed that the average student could list about 20 words in that time and that performance was predictive of university success. Furthermore, participants were told that their scores on the task would be correlated with their own grade point average. Participants were told that this was a timed test and that the results were valid only if everyone took it for the same length of time. The experimenter set the timer for 2 min and told the participants that they must quit typing as soon as the timer went off. The experimenter said that he or she would be gone to get some other materials and might be back a few minutes late. When the experimenter left the participant, he or she closed the door so that the participant was completely alone. The experimenter returned precisely 5 min after the timer had gone off, and the participant was then given some filler materials to complete. The participant was then probed for suspicion and thoroughly debriefed.

The laptop was equipped with software that surreptitiously took a screen shot every 6 s and recorded the time of the last keystroke. This enabled the experimenter to assess how long each participant continued to work and how many words the participant typed after the 2-min timer had gone off.

All materials and instructions were originally created in English and were then translated into Japanese using the same method described for Study 1.

### Results

**Preliminary analyses.** The percentage of females in each culture was compared, and the proportions were significantly different,  $\chi^2(1, N = 132) = 9.37, p < .01$ . Sex was included as a factor in all analyses, but there were no significant main effects for sex or Sex  $\times$  Condition interactions for any of the dependent variables.<sup>1</sup> The average age of both samples was 19.4 years, and this did not differ significantly across cultures,  $t < 1$ .

We analyzed how many words participants had listed prior to the timer's going off. Canadians averaged 15.36 words ( $SD = 4.87$ ), which was significantly greater than the Japanese average of 10.40 words ( $SD = 3.99$ ),  $F(1, 124) = 38.50, p < .001, \eta^2 = .24$ . This difference is consistent with the facts that kana (the Japanese syllabary) require more keystrokes to type, English has the greatest number of emotion words of any language (Russell, 1991), and North Americans are more likely to be particularly attentive to their emotional states

(Mesquita & Karasawa, 2002). Because people might feel a greater incentive to cheat if their performance seemed especially poor, we included the number of words listed prior to the timer's going off as a variable in analyses of cheating, although we note that all the significant effects remain when this variable is not included. Two participants from the Canadian sample expressed suspicion about the study, and their results are not included in any subsequent analyses.

*Cheating.* There were three ways that we calculated the degree to which participants failed to heed the experimenter's instructions. First, we counted how many additional words participants typed after the timer went off. The more words people typed, the more they were seen to have cheated. The entire sample averaged 1.45 words ( $SD = 2.24$ ) after the timer went off, and the averages varied across the four conditions from 0.50 words to 1.91 words. Second, we considered the time of participants' last keystroke, which indicated the amount of time after the timer went off that participants continued to work. The maximum possible time was 300 s after the timer went off, as this was when the experimenter returned. Across the entire sample, the average time of the last keystroke was 50.33 s ( $SD = 62.19$ ) after the timer went off, and across the four conditions, the average time varied from 19.6 s to 67.6 s. Third, we created a binary variable to indicate whether the participants typed anything after the timer went off or not. This allowed us to calculate the proportion of people who cheated. Across the entire sample, 58% ( $SD = 49.5\%$ ) of the participants typed at least one keystroke after the timer went off, and this varied across the four conditions (i.e., 2 cultures  $\times$  2 mirror conditions) from 42% to 71%. None of these measures would indicate any ceiling effects for any of the conditions. Each of these three variables reflects a slightly different measure of cheating, although we submit that the most sensitive measurement of cheating is the first variable, as it is the only measure that definitively assesses the amount that the participants cheated.

First, using the best measure of normative compliance, we analyzed the number of words that participants listed after the timer had gone off. The distribution was highly positively skewed (skewness = 2.06,  $SE = .21$ ), so we applied a negative binomial regression on each country sample.<sup>2</sup> A negative binomial regression assumes the dependent variable is discrete (integer) and nonnegative and has a zero mode, which characterizes the distribution of responses here. Maximum likelihood estimates are used for the coefficient estimates, and standard errors are based on the observed information matrix (see Table 2). The analysis of the Canadian sample reveals a highly significant effect for the presence of the mirror ( $\beta = 1.45$ ,  $SE = .43$ ,

$p < .001$ ), indicating that when the mirror was absent, Canadian participants listed significantly more words after the timer went off than they did when the mirror was present. In contrast, the same analysis conducted within the Japanese sample revealed no significant effect ( $\beta = -.09$ ,  $SE = .32$ ,  $ns$ ), indicating that the mirror had no effect on the Japanese participants. The 95% confidence intervals for these coefficient estimates are nonoverlapping.

Next we analyzed the amount of time between the timer's sounding and the participants' final keystroke. Because the distribution of times is nonnegative with a mode at zero (skewness = 1.04,  $SE = .21$ ), we applied a negative binomial regression on each country sample with time collapsed in 15-s increments. For Canadians, the regression revealed a significant effect for the presence of the mirror ( $\beta = 1.03$ ,  $SE = .49$ ,  $p < .05$ ), indicating that those who were not in front of the mirror typed their last keystroke significantly later than those who were in front of the mirror. For Japanese participants, the same regression revealed a null effect for the mirror ( $\beta = .15$ ,  $SE = .37$ ,  $ns$ ), indicating that the presence of the mirror did not affect the time of their last keystroke.

Last, we analyzed whether the proportion of participants who had typed anything after the timer went off varied across cultures, using binary logistic regression. A marginally significant Culture  $\times$  Condition interaction emerged, Wald = 3.56,  $p < .06$  (odds ratio = .71). Simple effect analyses revealed a marginally significant effect for Canadians,  $\chi^2(1, N = 70) = 2.73$ ,  $p < .10$ , with Canadians being slightly more likely to cheat when the mirror was not present than when it was. There was no effect for Condition among Japanese,  $\chi^2(1, N = 63) = 1.13$ ,  $ns$ .<sup>3</sup>

In sum, replicating past research (Diener & Wallbom, 1976), Canadians who were in front of a mirror were overall less likely to cheat on a task than those who were not in front of a mirror. In contrast, as in Study 1, the mirror had no impact on the responses of Japanese participants.

## GENERAL DISCUSSION

Across two studies, the presence of a mirror led North Americans to become more self-critical and less likely to cheat on a task, replicating past research. In stark contrast, the presence of a mirror had no impact for Japanese participants. We submit that the weak reaction among Japanese is due to their tendency to chronically consider themselves from the perspective of an audience. With such an orientation, Japanese are habitually in a state of OSA, and stimuli that enhance this state have few consequences for them (although Japanese did show a marginally significant effect of the

**TABLE 2:** Negative Binomial Regression Results for Study 2

Variable	Canadian Sample					
	Analyses for No. of Words Following Timer Going Off			Analyses for Time of Last Keystroke		
	$\beta$	p	95% CI	$\beta$	p	95% CI
Words listed following timer	1.45	.001	.60 2.29	1.03	.04	.07 1.99
Time of last keystroke				.97	.08	-.11 2.1
Sex	.90	.06	-.00 1.80	-.04	.34	-.13 .04
Words listed prior to timer going off	-.01	.76	-.09 .07	-.10	.37	-3.50 1.30
Constant	-2.74	.02	-5.02 -.46			

  

Variable	Japanese Sample					
	Analyses for No. of Words Following Timer Going Off			Analyses for Time of Last Keystroke		
	$\beta$	p	95% CI	$\beta$	p	95% CI
Words listed following timer	-.09	.78	-.73 .55	.15	.69	-.58 .88
Time of last keystroke				.38	.31	-.36 1.11
Sex	.40	.21	-.23 1.04	.06	.12	-.02 1.6
Words listed prior to timer going off	.16	.00	.09 .24	.22	.79	-1.46 1.91
Constant	-1.49	.03	-2.88 -.11			

mirror on self-esteem). It would seem that when Japanese evaluate themselves, they are evaluating a self that is considered from the imagined perspective of others. A subjective perspective on the self would seem to be less desirable and of less utility when meeting the consensual standards of others is an important cultural goal (see Heine, 2005; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). In effect, Japanese appear to have mirrors in their heads. These findings converge with recent work contrasting people from Eastern and Western cultures on their perspective-taking abilities (Cohen et al., 2007; Wu & Keysar, 2007). Our results also suggest that the self-focused attention that a mirror provides may be different from the kind of attention elicited by the critical glare of schematic faces—other research reveals that dissonance reduction can be effectively turned on among Japanese when they are presented with such schematized faces (see Kitayama, Snibbe, Markus, & Suzuki, 2004).

This research underscores how the phenomenological experience of selfhood can vary to an important degree across cultures (Cohen et al., 2007). Participating in a culture in which people are encouraged to consider the perspective of others leads people to habitually conceive of themselves in terms of how they imagine others might view them, and this can ultimately affect their thoughts about themselves and their behaviors. In contrast, those who participate in cultural contexts in which the individual's point of view is prioritized will be more likely to be in a state of subjective

self-awareness. In such contexts, people will rarely consider themselves from the perspective of others unless they encounter stimuli that direct their attention to the objective nature of their selves.

It is intriguing that in Study 1, although Americans had significantly more positive self-assessments than Japanese did when a mirror was absent, replicating much past research (Heine & Hamamura, 2007), there were no cultural differences in self-assessments when participants were in front of a mirror. This might indicate that when Americans are provided with the perspective of themselves that Japanese habitually take, they no longer view themselves in such positive terms. Perhaps one key reason North Americans self-enhance as much as they do (e.g., Taylor & Brown, 1988) is that they rarely consider themselves from the perspective of others and are thus more free to view themselves in the ways that they ideally would like to be (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006; Heine, 2005). A state of OSA constrains the degree to which people are able to view themselves in unrealistically positive terms (Duval & Silvia, 2002).

A limitation of these studies, and of research on OSA more generally, is that we are unable to measure self-awareness directly. We must infer it from people's reactions to stimuli that place people in a heightened state of OSA, such as being in front of mirrors or cameras. It would be informative to also investigate how Japanese people respond to stimuli that place people in a heightened state of subjective self-awareness, such as watching



television (Moskalenko & Heine, 2003). One possibility is that television should have a more pronounced impact on Japanese, given that being in a state of subjective self-awareness is less familiar to them than it is to North Americans. On the other hand, one could also predict that because Japanese are more likely to be chronically in a state of OSA, stimuli such as watching television will be unable to prompt them into a state of subjective self-awareness. Such kinds of cross-cultural comparisons would be useful in further elucidating the phenomenological experience of the self in East Asian cultural contexts.

This study highlights one important caveat of a culture-blind psychology. The vast majority of social psychological studies are conducted with North American college students (e.g., 92% of articles published in the *Journal of Personality and Social Psychology* are written by authors at North American universities; Quinones-Vidal, Lopez-Garcia, Penaranda-Ortega, & Tortosa-Gil, 2004), and thus the database cannot be said to be representative of humanity at large. Relatively little emphasis is typically placed on testing the cross-cultural generality of psychological findings (Heine & Norenzayan, 2006). This would not be so problematic if experimental results were discussed as representing the thought processes of North American college students; however, typically the default assumption is that the results speak more broadly to human nature. As an example, although we are unable to find any significant replications of OSA effects with Japanese samples, some Japanese social psychological textbooks discuss OSA effects as though they also apply to Japan (e.g., Nakamura, 2006, pp. 163-168; Saitou, 1985, p. 81). It is reasonable to conclude that North American findings on OSA effects generalize to other cultures, such as Japan, to the extent that psychological processes operate identically, regardless of context or content, as is often assumed. However, much cultural psychological research underscores the number of psychological processes, including those viewed as basic and fundamental, that are shaped in important ways by cultural context (see Norenzayan & Heine, 2005, for a review). Cross-cultural studies that reveal pronounced cultural variation in psychological phenomena, such as the present findings that manipulations of OSA have divergent effects across cultures, underscore the importance of developing culturally sensitive theories. Psychologists need to attend to the nature of their experimental samples when considering the generalizability of their findings.

## NOTES

1. Although there were no significant sex effects, two marginally significant effects emerged: The number of words listed for Canadian females was marginally more than the number listed for Canadian males, and the time of the last keystroke for Canadian females was marginally later than it was for Canadian males.

2. We also conducted these analyses with ANCOVAs, which yielded the same significant effects; however, the skewness of the distributions violates the assumptions of ANOVA.

3. We also explored whether there were main effects for culture for the three cheating measures. There was a significant main effect for the number of words listed ( $\beta = .36$ ,  $SE = .16$ ,  $p < .03$ ), a marginally significant effect for the time of the last keystroke ( $\beta = -.44$ ,  $SE = .23$ ,  $p < .06$ ), and a nonsignificant effect for whether participants cheated (Wald =  $-1.10$ ,  $\pi > .25$ ), all in the direction that Japanese were more likely to list words following the timer than were Canadians. However, because we are unable to ensure that we created identical motivations to cheat between the two cultures (there may well be different cultural norms regarding the authority of experimenters or the perceived importance of psychology experiments, and we cannot ensure that the degree of perceived anonymity was identical across cultures), we suggest that these main effects are not interpretable. A study would need to be designed differently to accurately assess whether cheating motivations differ across cultures.

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