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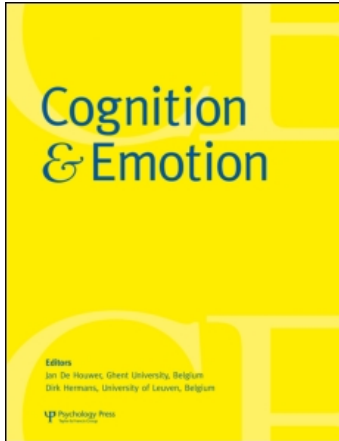
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BRIEF REPORT

A longitudinal experimental study comparing the effectiveness of happiness-enhancing strategies in Anglo Americans and Asian Americans

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Growing evidence suggests that well-being interventions can be effective. However, it is unclear whether happiness-increasing practices are equally effective for individuals from different cultural backgrounds. To investigate this question, Anglo Americans and predominantly foreign-born Asian Americans were randomly assigned to express optimism, convey gratitude, or list their past experiences (control group). Multilevel analyses indicated that participants in the optimism and gratitude conditions reported enhanced life satisfaction relative to those in the control condition. However, Anglo Americans in the treatment conditions demonstrated larger increases in life satisfaction relative to Asian Americans, while both cultural groups in the control condition showed the least improvement. These results are consistent with the idea that the value individualist cultures place on self-improvement and personal agency bolsters the efforts of Anglo Americans to become more satisfied, whereas collectivist cultures' de-emphasis of self-focus and individual goals interferes with the efforts of Asian Americans to pursue enhanced well-being.

Keywords: Well-being; Happiness; Life satisfaction; Intervention; Culture; Cultural differences.

Subjective well-being (or more colloquially, happiness) is increasingly desired and actively pursued by people worldwide (Diener, 2000; Suh & Koo, 2008). Moreover, evidence is building that the hallmarks of subjective well-being—namely, life

satisfaction and positive emotions—are associated with successful outcomes in relationships, work, and physical health (see Lyubomirsky, King, & Diener, 2005, for a review). Given the global heightened emphasis on the pursuit of happiness,

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along with the relative advantages happy people seem to enjoy, an important question is whether it is even possible to sustainably improve an individual's well-being.

Initial evidence suggests that, at least in the short term, well-being interventions can be successful. For example, activities like expressing gratitude (Emmons & McCullough, 2003; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, in press; Lyubomirsky, Sheldon, & Schkade, 2005), imagining one's ideal future life (King, 2001), performing acts of kindness (Sheldon, Boehm, & Lyubomirsky, in press; see also Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006), using one's personal strengths (Seligman, Steen, Park, & Peterson, 2005), pursuing need-satisfying goals (Sheldon et al., 2010), and meditating (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008) boost well-being.

An important criticism of the limited number of randomised well-being interventions published thus far is that they have employed only Western participants (see Otake et al., 2006, for an exception). Of course, "the pursuit of happiness" is a staple ideology in Western—and particularly North American—culture. People from individualist cultures also tend to emphasise an autonomous and independent self over the needs of the larger group, and are inclined to be motivated by personal needs and goals (Triandis, 1995). Thus, Western individuals tend to define happiness in terms of positive states (e.g., contentment, enjoyment), as well as personal freedom and accountability (Lu & Gilmour, 2004). By contrast, non-Western or collectivist cultures that emphasise social harmony and obligation to the group (Triandis, 1995) are likely to define happiness differently (Lu & Gilmour, 2004; Suh & Koo, 2008). For example, Asian individuals may conceptualise well-being as reflecting a state of balance and harmony with one's surroundings (Lu & Gilmour, 2004). Differences in cultures are also evident in the ways people make well-being judgements: Those from individualist cultures base their life satisfaction more on intrapersonal than interpersonal factors, whereas

those from collectivist cultures do the reverse (Suh, Diener, Oishi, & Triandis, 1998). Moreover, cultural background moderates the influence of the determinants of well-being—for example, self-esteem is more important to the well-being of people in individualist than in collectivist cultures (Diener & Diener, 1995). In sum, norms in collectivist cultures may be less supportive of self-expression, self-improvement, and the pursuit of individual goals. This suggests that traditional individually-focused happiness interventions may be less effective for those belonging to collectivist cultures than to individualist cultures.

To explore this idea, we designed a six-week randomised controlled intervention to test whether two happiness-enhancing strategies—optimistically thinking about the future and writing letters of gratitude—would produce equivalent gains in well-being for Anglo Americans and predominantly foreign-born Asian Americans. In line with previous findings, we hypothesised that individuals randomly assigned to either express optimism or gratitude (the treatment groups) would demonstrate increases in well-being relative to a control group. However, we expected these findings to be moderated by culture, whereby Anglo Americans in the treatment groups would demonstrate the greatest gains in well-being, compared with Asian Americans in the treatment groups and all participants in the control group. Notably, we selected the two treatment activities of practising optimism and gratitude because the former is focused on individual wishes and desires, whereas the latter directly invokes social relationships. Accordingly, we hypothesised that the gratitude condition would confer greater well-being advantages to Asian Americans than would the optimism condition. Given that past research with mostly Anglo Americans has shown that expressing both optimism and gratitude enhances well-being, we did not have specific hypotheses regarding whether one treatment condition would benefit Anglo Americans more than the other.

METHOD

Participants

Participants were 220 community-dwelling individuals (116 female, 104 male), ranging in age from 20 to 71 years ($M = 35.62$, $SD = 11.36$).¹ Forty-eight percent were married and, across the entire sample, the average participant had one child (range from 0 to 5 children, $SD = 1.19$). The highest modal level of education was college (56%), with 25% of participants completing graduate school and 19% completing only high school. Approximately half the sample identified their ethnicity as Asian (49%), and half identified their ethnicity as White or Anglo American (51%). Neither Anglo-American nor Asian-American participants were excluded if they were born outside the USA. Of the Asian Americans, 78% were born in foreign countries, with 47% of them born in China, 13% in Vietnam, 11% in Korea, 8% in Taiwan, and 21% in other countries (e.g., Singapore, Japan, Cambodia, India, Indonesia, Malaysia, Philippines). The 88 Asian Americans who were born abroad had lived an average of 16.67 years in the USA ($SD = 11.11$) and an average of 15.39 years in foreign countries ($SD = 10.85$).

When asked to rate the strength of their identification with their heritage culture and American culture (1 = *very weak*, 2 = *weak*, 3 = *somewhat weak*, 4 = *somewhat strong*, 5 = *strong*, 6 = *very strong*), Anglo Americans reported stronger identification with American culture ($M = 5.07$, $SD = 1.13$) than did Asian Americans ($M = 4.50$, $SD = 1.17$), $t(218) = 4.65$, $p < .001$. By contrast, Asian Americans reported stronger identification with their heritage culture ($M = 4.27$, $SD = 1.26$) than did Anglo Americans ($M = 3.38$, $SD = 1.57$), $t(218) = 3.68$, $p < .001$.

Participants were recruited through advertisements on community-based websites, fliers posted throughout communities in Southern California, and a Chinese-language newspaper advertisement targeting Chinese immigrants in Southern California. The majority of participants, however, were recruited online and therefore originated from different regions of the USA. The study was described as potentially improving mental and physical health so that participants' expectations across all conditions would be equivalent at the start of the experiment. If participants completed at least 6 out of the 7 study sessions (described below), they received \$60 in compensation.

Design and procedure

A 2 (Cultural Background: Asian American, Anglo American) \times 3 (Condition: optimism, gratitude, control) factorial design was used. Participants were randomly assigned to practise optimism ($n = 74$), express gratitude ($n = 72$), or list their past week's experiences ($n = 74$; control). Those in the optimism condition were asked to write about their best possible life in the future (with regards to their family, friends, romantic partner, career, health, and hobbies) and imagine that everything had gone as well as it possibly could (cf. King, 2001). Participants in the gratitude condition were asked to write letters of appreciation to friends or family members who had done something for which they were grateful (adapted from Seligman et al., 2005). Those in the control condition were asked to outline what they had done in the past week. The control activity was described as an organisational task to enhance the plausibility of this condition as a positive exercise.

Participants' essays were coded by two judges to determine whether essay content could explain expected differences in condition and cultural

¹The original sample consisted of 348 participants. We eliminated 26 individuals who were not Asian or Anglo (including biracial individuals), as well as 83 individuals who missed two or more study sessions and one individual with baseline well-being that exceeded three standard deviations. (Those who missed two or more study sessions did not differ from other participants in baseline well-being, condition, cultural background, age, or sex.) To compare models within multilevel modelling, the same individuals must contribute to each model. Hence, those with missing data on critical variables were excluded, yielding a total sample size of 220.

background. Using 7-point Likert scales (1 = *not at all*, 7 = *very*), judges rated the extent to which the essays expressed optimism, expressed gratitude, focused on the self, focused on others, used a future-orientation, used a past-orientation, and demonstrated overall effort. Each of these seven ratings were first averaged across judges and then across the intervention period. Reliabilities were excellent for the majority of the ratings ($\alpha_{\text{optimism}} = .92$, $\alpha_{\text{gratitude}} = .98$, $\alpha_{\text{future oriented}} = .98$, $\alpha_{\text{past oriented}} = .97$, $\alpha_{\text{effort}} = .92$) and adequate for the ratings of self- and other-focus ($\alpha = .79$, $\alpha = .82$, respectively).

Participants received initial instructions from the researchers by phone and e-mail. The rest of the experiment was conducted over the internet through a password-secured website. The first assessment consisted of demographic information and our outcome of interest, the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985).² The SWLS is a 5-item scale designed to assess the cognitive component of subjective well-being. Items such as "In most ways my life is ideal" were rated on 7-point Likert scales, which were then averaged such that higher scores indicated greater life satisfaction. Alphas for the SWLS ranged from .91 to .94 in this study.³ Following these measurements, participants completed the first of six writing manipulations, each lasting 10 minutes once a week for 6 weeks. Following the sixth, and last, week of the intervention, participants again completed the SWLS for an immediate post-intervention assessment. To evaluate any lingering effects stemming

from the intervention, participants completed the SWLS one month post-intervention. All study materials and stimuli were presented in English.

Analytic approach

We first conducted one-way analyses of variance (ANOVAs) and independent *t*-tests to determine whether initial life satisfaction differed by condition or cultural background. Similar analyses were used to determine whether judges' ratings of the essays differed by condition (i.e., a manipulation check), cultural background, or the interaction of condition and cultural background.

To account for within-person and between-person changes in satisfaction across time, we used multilevel modelling techniques estimated with SAS Proc Mixed. As recommended by Singer and Willett (2003), we started with unconditional models. Age, centred at the mean, was a significant predictor of initial life satisfaction, such that older participants reported lower life satisfaction than younger ones.⁴ Because of this difference, age was included as a covariate in all subsequent models.⁵ We then compared the baseline unconditional growth model to hypothesis-testing models (see Table 1 for all parameter estimates).

$$\text{Composite model: } Y_{ij} = \gamma_{00} + \gamma_{01}Age_i + \gamma^{10}Time_{ij} + (\varepsilon_{ij} + \zeta_{0i} + \zeta_{1i}Time_{ij})$$

$$\text{Level 1 model: } Y_{ij} = \pi_{0i} + \pi_{1i}Time_{ij} + \varepsilon_{ij}$$

$$\text{Level 2 models: } \pi_{0i} + \gamma_{00} + \gamma_{01}Age_i + \zeta_{0i} \text{ and } \pi_{1i} = \gamma_{10} + \zeta_{1i}$$

²We focused on the outcome of life satisfaction because it is a relatively stable component of subjective well-being compared with positive emotions, which are more likely to be transient and based on immediate situational influences, such as the weather or the day's events.

³It is important to ensure that items on the SWLS are interpreted similarly by individuals in both cultural groups. Because Oishi (2006) previously found sufficient evidence for measurement equivalence of the SWLS in American and Chinese samples, we felt that the equivalence would be adequate in our study.

⁴This result contrasts with previous evidence suggesting that well-being increases as people age (e.g., Carstensen, Pasupathi, Mayr, & Nesselrode, 2000). Although our finding is puzzling, people who are less happy to begin with are relatively more likely to seek out and participate in well-being interventions (Seligman et al., 2005). Furthermore, it is possible that this pattern is stronger in older people, who may be more open to "self-help." Consequently, our older participants may have had unusually low baseline well-being. In addition, the negative association between age and satisfaction was found to be stronger among Anglo Americans than Asian Americans.

⁵No other demographic characteristics were significant predictors of baseline satisfaction.

Table 1. Model parameters (standard errors) and goodness of fit

Effect		Parameter	Unconditional growth	Optimism vs. Gratitude vs. Control	Treatment vs. Control	Treatment vs. Control moderated by cultural background	Optimism vs. Gratitude vs. Control for cultural background
<i>Fixed effects</i>	Intercept	γ_{00}	4.47*** (0.09)	4.41*** (0.16)	4.41*** (0.16)	4.72*** (0.24)	4.47*** (0.19)
	Time	γ_{10}	.01 (0.01)	-.03 [†] (0.02)	-.03 [†] (0.02)	-.03 (0.02)	-.02 (0.02)
	Age	γ_{01}	-.02* (0.007)	-.02** (0.008)	-.02** (0.008)	-.03*** (0.008)	-.03*** (0.008)
	Treatment	γ_{02}	—	—	.09 (0.20)	-.29 (0.28)	—
	Optimism	γ_{03}	—	.22 (0.23)	—	—	.22 (0.22)
	Gratitude	γ_{04}	—	-.04 (0.23)	—	—	-.05 (0.23)
	Cultural background	γ_{05}	—	—	—	-.59 [†] (0.33)	-.11 (0.20)
	Treatment × Time	γ_{11}	—	—	.06** (0.02)	.1*** (0.03)	—
	Optimism × Time	γ_{12}	—	.05* (0.02)	—	—	.09** (0.03)
	Gratitude × Time	γ_{13}	—	.07** (0.02)	—	—	.08** (0.03)
	Cultural background × Time	γ_{14}	—	—	—	.01 (0.03)	-.008 (0.03)
	Treatment × Cultural background	γ_{15}	—	—	—	.73 [†] (0.39)	—
	Treatment × Cultural background × Time	γ_{16}	—	—	—	-.08 [†] (0.04)	—
	Optimism × Cultural background × Time	γ_{17}	—	—	—	—	-.07 [†] (0.04)
	Gratitude × Cultural background × Time	γ_{18}	—	—	—	—	-.02 (0.04)
<i>Random effects</i>	Level 1	σ_{ϵ}^2	.29*** (0.03)	.29*** (0.03)	.29*** (0.03)	.29*** (0.03)	.29*** (0.03)
	Level 2	σ_0^2	1.60*** (0.18)	1.59*** (0.18)	1.60*** (0.18)	1.58*** (0.18)	1.59*** (0.18)
		σ_1^2	.008*** (0.003)	.007*** (0.002)	.007** (0.003)	.006** (0.002)	.006** (0.002)
<i>Goodness of fit</i>	Deviance		1736.50	1724.20	1726.10	1714.70	1715.40
	Akaike information criterion		1750.50	1746.20	1744.10	1740.70	1745.40
	Bayesian information criterion		1774.30	1783.60	1774.60	1784.90	1796.30

Note. [†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Time was coded such that the baseline equalled 0, immediate post-intervention equalled 5, and the 1-month follow-up equalled 6. Variables representing condition and cultural background were entered as between-subjects predictors at the second level of the models. Condition was dummy coded with the control group as the reference. Cultural background was dummy coded with the Anglo-American group as the reference.

RESULTS

Preliminary analyses

Asian Americans and Anglo Americans did not differ in life satisfaction prior to beginning the intervention ($t = 0.91$, *ns*), and neither did the three experimental groups ($F = 0.90$, *ns*). This latter non-significant finding suggests that random assignment to condition was successful.

As expected, essays written by participants in the optimism condition were judged as more optimistic ($M = 4.45$) than those written by participants in the gratitude ($M = 3.52$) and control conditions ($M = 1.79$), $F(2, 217) = 408.11$, $p < .0001$; and essays from the gratitude condition were judged as more grateful ($M = 5.91$) than those from the optimism ($M = 1.82$) and control conditions ($M = 1.23$), $F(2, 217) = 1,196.64$, $p < .0001$. Consistent with the instructions for each condition, individuals in the gratitude condition were the least focused on themselves ($M_{\text{Gratitude}} = 4.54$; $M_{\text{Optimism}} = 5.52$; $M_{\text{Control}} = 5.70$), $F(2, 217) = 127.40$, $p < .0001$, and the most focused on others ($M_{\text{Gratitude}} = 5.44$; $M_{\text{Optimism}} = 4.24$; $M_{\text{Control}} = 3.97$), $F(2, 217) = 65.43$, $p < .0001$. Individuals in the optimism condition were relatively less focused on the past ($M_{\text{Optimism}} = 2.22$; $M_{\text{Gratitude}} = 6.05$; $M_{\text{Control}} = 6.33$), $F(2, 217) = 1,191.39$, $p < .0001$, and relatively more focused on the future ($M_{\text{Optimism}} = 6.12$; $M_{\text{Gratitude}} = 2.29$; $M_{\text{Control}} = 1.39$), $F(2, 217) = 1,274.41$, $p < .0001$. Judged effort on the writing task did not differ by condition, $F(2, 217) = 0.75$, $p > .4$.

Finally, with one exception, Anglo Americans and Asian Americans did not differ significantly on any of the judges' essay ratings. Anglo Amer-

icans, however, were judged to have exerted more effort on their essays ($M = 4.25$) than did Asian Americans ($M = 3.76$), $t(218) = 3.05$, $p < .01$. No significant differences emerged in any of the judges' ratings when examining the interaction between condition and cultural background.

Multilevel modelling analyses

To replicate previous findings, we examined the effect of condition on trajectories of life satisfaction. Relative to the baseline model, there was a significant improvement of fit when condition was included in the model, $\chi^2(4) = 12.3$, $p < .05$. Specifically, participants who expressed optimism, $\gamma_{12} = .05$, $SE = 0.02$, $t(199) = 1.98$, $p < .05$, or gratitude, $\gamma_{13} = .07$, $SE = 0.02$, $t(199) = 3.03$, $p < .01$, showed increases in satisfaction across time relative to control participants. We found a similar pattern after collapsing together the two treatment conditions and comparing them with the control condition—namely, those in the control condition did not receive the boost in satisfaction that those in the treatment conditions did, $\gamma_{11} = .06$, $SE = 0.02$, $t(199) = 2.87$, $p < .01$; comparison with baseline model: $\chi^2(2) = 10.4$, $p < .01$.

Notably, the effect of condition was qualified by cultural background, $\gamma_{16} = -.08$, $SE = 0.04$, $t(199) = -1.91$, $p = .057$; comparison with previous model: $\chi^2(4) = 11.40$, $p = .02$. Asian Americans in either of the two treatment conditions displayed little change in satisfaction across time, whereas Asian Americans in the control condition actually showed very small decrements in their satisfaction. By comparison, the Anglo Americans in either of the two treatment conditions demonstrated the biggest gains in satisfaction of all the groups, and the Anglo Americans in the control condition showed a slight decrease or no change.

Moreover, in line with our predictions, a trend emerged for Asian Americans to derive less benefit from expressing optimism, $\gamma_{17} = -.07$, $SE = 0.04$, $t(199) = -1.68$, $p = .09$, than from expressing gratitude, $\gamma_{18} = -.02$, $SE = 0.04$, $t(199) = -0.55$, *ns*, relative to Anglo Americans (see far right column in Table 1). That is, Asian

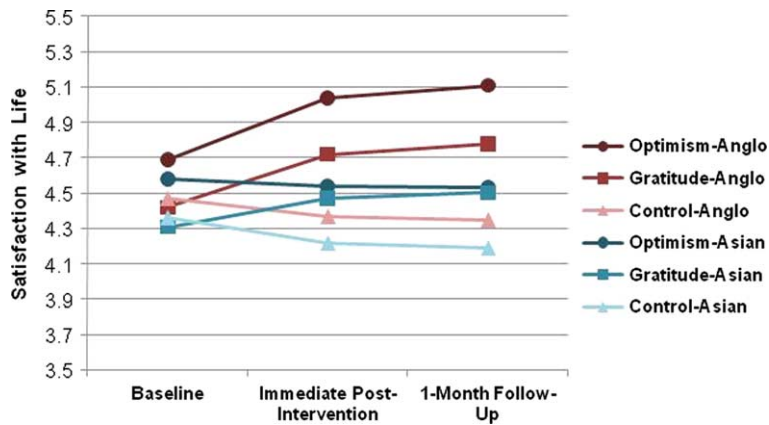


Figure 1. Trajectories of life satisfaction across time for Anglo Americans in the optimism condition, Anglo Americans in the gratitude condition, Anglo Americans in the control condition, Asian Americans in the optimism condition, Asian Americans in the gratitude condition, and Asian Americans in the control condition (with age shown at its average).

Americans in the gratitude condition showed slight increases in life satisfaction across time, whereas Asian Americans in the optimism condition showed essentially no change (see Figure 1). These marginally significant findings are consistent with the idea that writing letters of gratitude—a practice that presumably emphasises social connectedness—may be more fitting for individuals for whom social relationships and social harmony are cultural priorities.

DISCUSSION

Consistent with previous research, our experimental intervention demonstrated that regularly practising optimism and conveying gratitude over the course of 6 weeks enhances life satisfaction relative to writing about weekly experiences. In addition, the study provided an opportunity to examine whether participants' cultural background would impact the effects of such activities on well-being. Our results were consistent with the notion that Western culture's emphasis on self-improvement and personal agency—and a fixation with the pursuit of happiness in particular—would bolster the efforts of its members to enhance well-being, whereas Asian culture's lesser focus on individual (as opposed to group) goals would provide weaker support and

endorsement of its members' happiness-boosting activities. Specifically, we found that Anglo Americans benefited more from the intervention than did predominantly foreign-born Asian Americans, despite the fact that both groups started with equivalent levels of life satisfaction and, based on ratings from independent judges, seemed to write about comparable topics during the intervention. Notably, however, this effect was most pronounced in the two treatment conditions and not in the control condition, even though all participants were initially led to believe that the activity in which they were to engage would bolster well-being. Furthermore, in accordance with our hypotheses, Asian Americans seemed to benefit marginally more from conveying gratitude to people in their lives rather than expressing optimism about their personal futures.

Although this is one of the first studies to observe cultural differences in the efficacy of happiness-enhancing activities, the exact mechanism that accounts for these differences remains unclear. Past research regarding cultural norms offers some suggestions for why Anglo Americans and Asian Americans may have responded differently to the intervention. For example, Anglo Americans may feel societal "pressure" to experience high levels of well-being and may assume personal responsibility for achieving it (Suh,

2000), leading them to exert relatively more effort and to report greater satisfaction. By contrast, individuals with a collectivist background may be reluctant to experience and express intense positive states for fear of disrupting harmonious relationships or neglecting other life domains (Suh & Koo, 2008). Asian Americans may also want to minimise improvements in well-being so as to remain humble or avoid standing out among their social group (Diener, Suh, Smith, & Shao, 1995). Furthermore, Asian Americans may want to avoid tempting fate by not reporting increased well-being (Diener et al., 1995). These or other cultural prescriptions and norms may account for the cultural differences we found. Indeed, a study of students from 40 countries found that individuals from relatively more collectivist nations based their life satisfaction judgements equally on norms and their internal feelings, whereas individuals from relatively more individualist nations based their life satisfaction judgements primarily on their internal feelings (Suh et al., 1998).

Another possible explanation for the observed cultural differences comes from research suggesting that the pursuit of happiness is only fruitful when done under optimal conditions. That is, people need both a “will” (i.e., the desire and motivation to become happier) and a “way” (i.e., an efficacious happiness-boosting activity or positive practice; Lyubomirsky et al., in press). In the present study, cultural background—and its associated norms and supports—could potentially have impacted participants’ “will” to exert effort into enhancing well-being. However, although Anglo Americans may have had more will to change than did Asian Americans (as demonstrated by the greater effort independent judges thought they exerted), will is not sufficient. Individuals must also have access to a proper way by which to achieve well-being gains. Indeed, Anglo Americans reported greater boosts in life satisfaction than did Asian Americans, but only when the Anglo Americans engaged in an effective activity like expressing optimism or gratitude (versus a placebo activity). This finding suggests that participating in empirically estab-

lished positive activities and originating from a culture that endorses the pursuit of individual well-being may be relevant for achieving enhanced happiness.

This last argument raises important ethical questions: Should people from non-Westernised or collectivist cultures be encouraged to pursue ever-greater personal well-being? Furthermore, should they achieve this by means that do not fit their cultural traditions? As noted above, Asian Americans showed a trend towards benefiting more from expressing gratitude than practising optimism. Because expressing gratitude may more closely align with Asian-rooted values and priorities, the activity may have been viewed by Asian Americans as a more appropriate “way” to attain happiness; hence, they may have experienced a stronger “will” to do so. The implications of our findings caution against the assumption that all cultures have norms consistent with seeking improvements in personal well-being, that all individuals have the same will or motivation to increase personal well-being, and that all individuals benefit from the same way of pursuing it. Additional research is needed to identify more specifically those cultural factors that can account for the cultural differences we found.

Limitations

Due to the relatively small sample sizes for specific groups of Asian Americans (e.g., Korean, Chinese, Japanese), we combined all (primarily East) Asian participants into a larger, more heterogeneous group. Although some cultural differences undoubtedly exist among distinct Asian immigrant groups, we felt that Asia’s broad emphasis on collective goals—as opposed to a focus on individual pursuits and personal well-being—would be captured by a mixed sample of Asian Americans. In other words, the similarities among these cultures (at least those relevant to this research) likely outweigh the differences. Although we are not the first researchers to use a heterogeneous sample when examining cultural differences (e.g., English & Chen, 2007), it would be valuable for future investigators to conduct

well-being interventions in samples within Asian countries rather than using Asian Americans as a proxy because native Asians are likely to be even more different from Anglo Americans. Notably, however, the use of an Asian American (vs. Asian) sample likely proved to be a more conservative test of our hypotheses.

Another limitation concerns the use of self-report methodology in this study, which raises potential social desirability and response biases. Although well-being is, by definition, a subjective construct, future research could be strengthened by additional measurement methods including peer report, experience sampling, facial expression coding, and physiological indicators. Moreover, consideration of other aspects of subjective well-being in happiness-boosting interventions (e.g., high and low arousal positive and negative emotions) may reveal different underlying processes, outcomes, or cultural differences. Given that Anglo Americans and Asian Americans define and value affective states differently—for example, Anglo Americans tend to strive for high-arousal affect and Asian Americans for low-arousal affect (Tsai, 2007)—it is critical that future research includes outcomes that capture the meaning of well-being for both individualist and collectivist cultures.

Concluding remarks

Taken together, our findings suggest that although most individuals pursuing happiness will benefit by regularly practising gratitude and optimism, those benefits may be mitigated by cultural norms and values that fail to support their efforts. Whether other intervention activities, like reflecting on fulfilling one's obligations or working to feel understood by others (Lun, Kesebir, & Oishi, 2008), may be more successful in bolstering personal happiness among members of collectivist cultures remains a question for future research.

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