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Is Collectivistic Forgiveness Different from Individualistic Forgiveness? Dispositional Correlates of Trait Forgivingness in Canada and Japan

Abstract

Trait forgivingness is associated with subjective well-being and positive health outcomes. However, researchers have argued recently that in collectivistic cultures, forgiveness is primarily determined by cultural norms that value social harmony and the forgivers' dispositions are less important than in individualistic cultures. The present study tested whether 18 dispositional variables, such as Big Five personality traits, would be more strongly correlated with trait forgivingness in Canada (an individualistic country) than in Japan (a collectivistic country). A series of tests of two independent correlations revealed that even without the *p*-value adjustment for multiple tests, only two of the 18 dispositional variables were more strongly correlated with trait forgivingness in Canada than in Japan. This result suggests that there is considerable similarity among dispositional correlates across the two countries. In both countries, trait forgivingness was correlated with similar dispositional variables, such as agreeableness, extraversion, and neuroticism.

Keywords: trait forgivingness, individualism/collectivism, Big Five personality traits

Public Significance Statements

Studies have shown that forgiveness is be associated with positive outcomes, such as higher subjective well-being. However, some scholars argue that trait forgivingness is correlated with dispositional variables in individualistic cultures, but not in collectivistic cultures. Such a cultural difference—if, in fact, it exists—inhibits psychologists from readily generalizing the notion of forgiveness to people from different cultural backgrounds. The present study revealed that trait forgivingness is correlated with mostly similar dispositional variables in an individualistic country (Canada) and a collectivistic country (Japan).

Trait forgivingness is defined as one's disposition to forgive others (Berry, Worthington, O'Connor, Parrott, & Wade, 2005; Roberts, 1995). Empirical studies have revealed that trait forgivingness is correlated with subjective well-being and mental/physical health outcomes (Worthington, Witvliet, Pietrini, & Miller, 2007). Recently, increasing efforts have been devoted to identifying cultural similarities and differences in forgiveness in general and trait forgivingness in particular (Ho & Worthington, 2018; Hook, Worthington, & Utsey, 2009; Sandage, Hill, & Vang, 2003). According to Hook et al. (2009), whether to forgive others is more strongly constrained by social norms, such as a norm of harmony, in collectivistic cultures than in individualistic cultures. As a result, internal variables, such as personality traits, may be less important in determining forgiveness in collectivistic cultures (Hook et al., 2009).

Studies conducted in individualistic cultures have shown that trait forgivingness is positively correlated with agreeableness, extraversion, and trait empathy (i.e., empathic concern and perspective taking) and negatively correlated with neuroticism (e.g., Ashton, Paunonen, Helmes, & Jackson, 1998; Berry et al., 2005; Berry, Worthington, Parrott, O'Connor, & Wade 2001; Brown, 2003). However, trait forgivingness was not significantly correlated with agreeableness and neuroticism among Nepalese students (Watkins & Regmi, 2004), and it was not significantly correlated with anxiety and self-esteem in a Chinese sample (Fu, Watkins, & Hui, 2004). Nevertheless, some studies have uncovered significant correlations between trait forgivingness and personality traits in collectivistic cultures: it was positively correlated with agreeableness and negatively correlated with neuroticism among Taiwanese and Japanese samples (Kato & Taniguchi, 2009; Ohtsubo, Yamaura, & Yagi, 2015; Wang, 2008). Therefore, there is no conclusive evidence of weaker (if not the absence of) correlations between trait forgivingness and personality traits in collectivistic cultures.

The primary purpose of this study was to compare correlations between trait forgivingness and a relatively comprehensive set of dispositional variables in an individualistic country (i.e., Canada) versus a collectivistic country (i.e., Japan). According to Hook et al.'s (2009) hypothesis, correlations between trait forgivingness and dispositional variables should be significantly greater in Canada (an individualistic culture) than in Japan (a collectivistic culture). This prediction merits empirical testing because such cultural differences—if, in fact, they exist—necessitate special care in generalizing the notion of forgiveness to collectivistic cultures as well as to minority ethnic group members from collectivistic cultural backgrounds.

Method

Participants

This study involved 181 undergraduate students at the University of Alberta, Canada (122 females and 59 males; mean age = 19.47 years, *SD* = 1.83) and 213 undergraduate students at Kobe University, Japan (112 females, 100 males, and 1 unreported; mean age = 19.25 years, *SD* = 0.99). For the Canadian sample, we recruited only self-claimed white Canadians. Data collection in both countries was part of a larger research project[1]. All measures analyzed in this study were administered in a paper-and-pencil format in both Canada and Japan.

The expected cultural differences between these two samples were confirmed by the scores of the Independent and Interdependent Self-Construals Scale (Singelis, 1994). Canadian participants perceived themselves as more independent (3.85, *SD* = 0.53) than Japanese participants (3.11, *SD* = 0.60), $t(392) = 12.81$, $p < .001$, Cohen's $d = 1.30$; while Japanese participants perceived themselves as more interdependent (3.71, *SD* = 0.48) than Canadian participants (3.40, *SD* = 0.48), $t(392) = 6.42$, $p < .001$, Cohen's $d = 0.65$.

Measures

Among a larger set of measures, we used three criteria to select the dispositional variables included in this study. First, at least one previous study found cultural difference in the focal variable's correlation with trait forgivingness. Second, at least one previous study found a non-significant correlation between its closely related construct and trait forgivingness in collectivistic cultures. Third, previous studies have established its conceptual/empirical correlation with trait forgivingness (see the Inclusion Criteria section and Dispositional Variables section in the Supplementary Materials for justifications for including these measures, sample items, and the reference information for the Japanese versions of these scales): (i) *trait forgivingness*, measured on a 5-point scale by the Trait Forgivingness Scale (TFS; Berry et al., 2005) comprising 10 items (e.g., I can forgive a friend for almost anything); (ii) *subjective happiness*, measured on a 7-point scale by the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999); (iii) Big Five personality traits (*agreeableness*, *conscientiousness*, *extraversion*, *neuroticism*, *openness*), measured by the NEO Five-Factor Inventory comprising 12 items for each personality trait (score range = 0–48) (Costa & McCrae, 1992); (iv) *self-esteem*, measured on a 6-point scale by Rosenberg's Self-Esteem Scale (Rosenberg, 1965) consisting of 10 items; (v) trait empathy (*empathic concern*, *perspective taking*, *personal distress*, *fantasy*), measured on a 5-point scale by the Interpersonal Reactivity Index (IRI; Davis, 1983); (vi) *behavioral inhibition system* (*BIS*) and *behavioral activation system* (*BAS*) *sensitivities*, measured on a 4-point scale by the BIS/BAS scale (Carver & White, 1994); and (vii) *loneliness*, measured on a 4-point scale by the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980) consisting of 20 items; (viii) *general trust* and *caution*, measured on a 5-point scale in Canada and a 7-point scale in Japan by the Trust Scale (Yamagishi et al., 2015); (ix) *psychopathic dispositions*, measured on a 4-point scale by the Primary and Secondary Psychopathy Scale (Levenson, Kiehl, &

Fitzpatrick, 1995).

Results

Trait forgivingness (Cronbach's α coefficient was .84 in Canada and .79 in Japan) was higher in the Canadian sample (3.34, *SD* = 0.71) than in the Japanese sample (2.81, *SD* = 0.61). The difference between trait forgivingness was significant by Welch's test, $t(358.4) = 7.80$, $p < .001$, Cohen's $d = 0.79$. This cultural difference is consistent with previous findings (Berry et al., 2005; Karremans et al., 2011). We did not include gender in the subsequent analyses because there were no significant gender differences in trait forgivingness (*t*s < 1 in both countries). The descriptive statistics and tests of cultural differences for the other 18 dispositional variables are reported in Table S1 in the Supplementary Materials. The correlation matrix of the dispositional variables for each country is reported in Table S2.

As shown in Table 1, trait forgivingness was significantly correlated with 13 of the 18 dispositional variables in Canada and with 10 of the 18 dispositional variables in Japan (significance level adjusted for multiple tests within each culture using Holm's method). The correlational pattern was similar across the two countries: Subjective happiness, agreeableness, extraversion, self-esteem, and general trust were significantly positively correlated with trait forgivingness in both countries, while neuroticism, BIS, loneliness, caution, and primary psychopathy were significantly negatively correlated with trait forgivingness in both countries.

More central to the hypothesis, we conducted a series of 18 tests of two independent correlations. The results were not consistent with Hook et al.'s (2009) hypothesis. When the critical *p*-value was adjusted for multiple tests applying the Bonferroni correction (significance level set at .0028 = .05/18), only one dispositional variable (i.e., perspective taking) was significantly more strongly correlated with trait forgivingness in Canada than in Japan (see Table

1). When *p*-values were not adjusted for multiple tests, only one of the other 17 variables (i.e., subjective happiness) became significant. Although the direction of significant differences in correlations was consistent with Hook et al.'s hypothesis, it seems safe to conclude that trait forgivingness is correlated with similar dispositional variables both in Canada and Japan, although the magnitude of the correlations may be slightly smaller in Japan than in Canada.

Discussion

Although there was a slight tendency for Canadian correlations to be larger than Japanese correlations, the overall differences were rather negligible. Trait forgivingness was correlated with almost identical sets of dispositional variables (e.g., agreeableness, neuroticism, self-esteem, BIS) in both Canada and Japan. This result tilts toward the null hypothesis, but not the cultural difference hypothesis and thus encourages forgiveness researchers to apply previous findings—most of which have been accumulated in individualistic cultures—to populations with different cultural backgrounds.

This study had several limitations. First, the nature of this trait-level study does not eliminate possibilities that people in collectivistic cultures forgive others for different reasons, such as a concern for social harmony (e.g., Kadima Kadiangandu, Mullet, & Vinsonneau, 2001; Kurniati, Worthington, Poerwandari, Ginanjar, & Dwiwardani, 2017; Suwartono, Prawasti, & Mullet, 2007). The second limitation is the reliance on student samples. Thus, it is desirable to confirm the present result with community samples. The third limitation is the exclusive focus on two countries—namely, Canada and Japan. Future studies should include a wider range of individualistic and collectivistic countries.

In conclusion, this study underscored cross-cultural similarities, rather than differences, in trait forgivingness. If trait forgivingness is correlated with similar dispositional variables in

both individualistic and collectivistic cultures, it is reasonable to expect that forgiveness processes also have substantial cross-cultural commonalities. Acknowledging the presence of such commonalities is a starting point for more fruitfully exploring subtle cultural differences in forgiveness processes.

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Footnotes

[1] Some results from this project were already published (see the Supplementary Materials).

Table 1

Within-Country Correlations with Trait Forgivingness and Other Variables of Interest and the Results of the Tests of Difference in Two Independent Correlations.

	Canada			Japan			Test of the Difference in Two Independent Correlations		
	r	n_{Canada}	Sig. (Adjusted)	*r*	n_{Japan}	Sig. (Adjusted)	*Z*	*p*-value	Sig. (unadjusted)
Dispositional Variables									
(ii) Subjective Happiness	.42	181	***	.22	212	*	2.16	.031	*
(iii) Big Five Personality									
Agreeableness	.57	181	***	.53	212	***	0.58	.561	
Conscientiousness	.13	181		.09	212		0.47	.637	
Extraversion	.23	181	*	.33	212	***	1.09	.278	
Neuroticism	−.42	181	***	−.47	212	***	0.61	.544	
Openness	.04	181		.06	212		0.19	.848	
(iv) Self-Esteem	.36	180	***	.20	213	*	1.67	.096	
(v) Empathy									
Empathic Concern	.26	181	**	.07	213		1.91	.056	
Perspective Taking	.37	181	***	.08	212		3.02	.0025	**
Personal Distress	−.10	181		−.11	198		0.08	.936	
Fantasy	−.07	181		−.07	213		0.06	.951	

(Table 2 *cont'd*)

(vi) BIS/BAS								
BIS	−.27	180	**	−.29	213	***	0.28	.779
BAS	−.07	180		−.06	213		0.11	.910
(vi) Loneliness	−.35	181	***	−.41	213	***	0.75	.455
(viii) Trust								
General Trust	.24	181	**	.42	213	***	1.89	.059
Caution	−.21	181	*	−.28	213	***	0.81	.419
(ix) Psychopathy								
Primary Psychopathy	−.28	181	**	−.29	213	***	0.03	.980
Secondary Psychopathy	−.31	181	***	−.16	213		1.59	.111

SUPPLEMENTARY MATERIALS

Is Collectivistic Forgiveness Different from Individualistic Forgiveness?

Dispositional Correlates of Trait Forgivingness in Canada and Japan

Inclusion Criteria

We included dispositional variables (or an entire scale involving the relevant subscale) that met one of the following criteria: (1) At least one previous study reported that the correlation between the focal dispositional variable and trait forgivingness was significant in individualistic cultures, but not significant in collectivistic cultures. (2) At least one previous study reported that the correlation between a construct related to the focal dispositional variable and trait forgivingness was not significant in collectivistic cultures. (3) The focal dispositional variable has been known to be correlated with trait forgivingness or forgiveness processes in individualistic cultures. The second and third criteria were used to expand the range of dispositional variables included in the analyses. We expected that the inclusion of more dispositional variables would increase our likelihood of detecting hypothesized cultural difference (i.e., significant in Canada but non-significant in Japan). In the following section, we denote the criterion number that was used in deciding to include each dispositional variable in the analyses.

Dispositional Variables

(i) Trait Forgivingness

Trait forgivingness was the focal variable of this study. It was operationalized by Trait Forgivingness Scale (TFS) developed by Berry, Worthington, O'Connor, Parrott, & Wade, 2005). The Japanese version was developed by Ohtsubo, Yamaura, and Yagi (2015).

(ii) Subjective Happiness (Criterion #3)

It has been established that forgiveness is associated with greater subjective well-being (e.g., Allemand, Hill, Ghaemmaghami, & Martin , 2012; Toussaint & Webb, 2005). In addition, Ohtsubo et al. (2015) showed that subjective well-being was positively correlated with trait

forgivingness in Japan. However, Sastre, Vinsonneau, Neto, Girard, and Mullet (2003) found a significant correlation between life satisfaction and trait forgivingness in France (i.e., an individualistic culture) but a non-significant correlation in Portugal (i.e., a relatively collectivistic culture). Although this asymmetry is consistent with Hook, Worthington and Utsey's (2009) hypothesis, it must be cautiously interpreted because of the large sample size difference (810 in France and 192 in Portugal). Therefore, it is worthy to test the cultural difference in subjective well-being × trait forgivingness correlation in Canada and Japan. Subjective happiness was measured on a 7-point scale by the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999; Shimai, Otake, Utsuki, Ikemi, & Lyubomirsky, 2004) that consisted of four items (e.g., In general, I consider myself as a happy person).

(iii) Big Five Personality Traits (Criterion #1)

Watkins and Regmi (2004) found non-significant correlations between trait forgivingness and agreeableness/neuroticism in Nepal. Agreeableness and neuroticism are the personality traits that are most reliably correlated with trait forgivingness in individualistic cultures (e.g., Ashton, Paunonen, Helmes, & Jackson, 1998; Berry et al., 2005; Berry, Worthington, Parrott, O'Connor, & Wade 2001; Brown, 2003). Moreover, there are studies that found significant correlations between agreeableness/neuroticism and trait forgivingness in collectivistic countries, such as Taiwan and Japan (Kato & Taniguchi, 2009; Ohtsubo et al., 2015; Wang, 2008). Accordingly, we included the Big Five personality traits (*agreeableness*, *conscientiousness*, *extraversion*, *neuroticism*, *openness*) in this study. They were measured by the NEO Five-Factor Inventory involving 12 items for each personality trait (score range = 0–48) (Costa & McCrae, 1992; Shimonaka, Nakazato, Gondo, & Takayama, 1999).

(iv) Self-Esteem (Criterion #1)

Fu, Watkins, and Hui (2004) found that self-esteem was not significantly correlated with trait forgivingness among a Chinese sample. Furthermore, self-esteem was not significantly correlated with trait forgivingness in a study conducted in Portugal, which is a relatively collectivistic country in Europe (Neto & Mullet, 2003). Although these findings seem to suggest that self-esteem is uniquely uncorrelated with trait forgivingness in collectivistic cultures, Fehr, Gelfand, and Nag's (2010) meta-analytic review showed that self-esteem was not associated with forgiveness (note that the most studies included in the meta-analysis were conducted in individualistic cultures, and that the dependent variable was more often state forgiveness rather than trait forgivingness). Accordingly, self-esteem was included to examine whether it is in fact not correlated with trait forgivingness in a collectivistic country (i.e., Japan), and whether they are correlated in an individualistic culture (i.e., Canada). Self-esteem was measured on a 6-point scale by Rosenberg's Self-Esteem Scale (Rosenberg, 1965; the original English version was translated into Japanese by the authors) that consisted of 10 items (e.g., On the whole, I am satisfied with myself).

(v) Trait Empathy (Criterion #3)

Fehr et al.'s (2010) meta-analysis revealed that empathy is one of the strongest predictors of forgiveness. In fact, some studies have shown that trait forgivingness is correlated with trait empathy (e.g., Berry et al., 2005; Brown, 2003). Accordingly, we included Davis's (1983) Interpersonal Reactivity Index (IRI; the Japanese version was developed by Aketa, 1999). IRI was designed to measure four aspects of empathy: *empathic concern*, *perspective taking*, *personal distress*, and *fantasy*. Empathic concern refers to a tendency to experience compassion for others in pain (e.g., I often have tender, concerned feelings for people less fortunate than me). Perspective taking refers to a tendency or ability to take a point of view of someone else (e.g., I

sometimes try to understand my friends better by imagining how things look from their perspective). Personal distress refers to a tendency to experience discomfort in witnessing other people's undergoing negative events (e.g., When I see someone get hurt, I tend to remain calm [reverse coded item]). Fantasy refers to a tendency to identify oneself with a fictitious characters in books and movies (e.g., I really get involved with the feelings of the characters in a novel). These items were rated on a 5-point scale.

As shown in Table 1 (main text), in this study, empathic concern and perspective taking were significantly positively correlated with trait forgivingness only in Canada. However, these correlations were not significant in Japan. The absence of the significant correlations in Japan might be due to the relatively low reliability associated with these empathy measures (Cronbach's α coefficient was .36 and .63 for empathic concern and perspective taking, respectively in Japan; see Table S1). It has been known that Aketa's (1999) Japanese IRI, which was used in this study, was associated with inherently low reliability. In an effort to solve this problem, Himichi et al. (2017) recently developed an improved version of Japanese IRI. However, this refined Japanese IRI was not yet available when the data collection of this study was undertaken.

(vi) BIS/BAS Sensitivities (Criterion #2)

The Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS) Scale was developed by Carver and White (1994) to measure the two motivational systems: the behavioral inhibition system (BIS) is sensitive to cues that may lead to negative, painful outcomes, and associated with experiences of anxiety; the behavioral activation system (BAS) is sensitive to cues of rewards, and facilitates movements toward goals. Sample items of the scale include "Criticism or scolding hurts me quite a bit" (BIS) and "I go out of my way to get things I

want" (BAS), which were rated on a 4-point scale. It was shown that the BIS is associated with anxiety (Carver & White, 1994). Anxiety was not significantly correlated with trait forgivingness in a Chinese sample (Fu et al., 2004). More importantly, this non-significant correlation is considered as supportive evidence for weaker correlation between dispositional variables and trait forgivingness in collectivistic cultures (Hook et al., 2009). Therefore, it was worthwhile teseting whether trait anxiety would be significantly correlated with trait forgivingness in Canada but not in Japan. Although this study, unfortunately, did not include direct measures of anxiety, it included the BIS/BAS scale. Accordingly, we decided to include it (especially BIS) as a proxy measure of anxiety in this study. The Japanese version of the BIS/BAS scale was developed by Takahashi et al. (2007).

(vii) Loneliness (Criterion #2)

It is known that loneliness is associated with anxiety and lower mental health (Cacioppo & Patrick, 2008). Remember that trait forgivingness is positively associated with mental health. In addition, the non-significant correlation between anxiety and trait forgivingness in a Chinese sample (Fu et al., 2004) is considered as supportive evidence for weaker correlations between trait forgivingness and dispositional variables (Hook et al., 2009). Therefore, for an exploratory purpose, we included the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980; Moroi, 1992), which consisted of 20 items (e.g., There is no one I can turn to) rated on a 4-point scale.

(viii) General Trust and Caution (Criterion #3)

We included trust because trust recovery and forgiveness are often used synonymously (e.g., Desmet, De Cremer, & van Dijk, 2011; Kim, Ferrin, Cooper, & Dirks, 2004). Consistent with this conceptualization, a recent study found a relationship between trust and forgivingness, and this relationship might be moderated by culture (Antonucci, Ajrouch, Webster, & Birditt,

2018). Therefore, we employed the Trust Scale developed by Yamagishi and Yamagishi (1994; see also Yamagishi, Akutsu, Cho, Inoue, Li, & Matsumoto, 2015) consisting of two factors: general trust and caution. General trust items measure a level of trust in general others (e.g., Most people are basically honest). Caution items measure a belief that caution is needed in dealing with others (e.g., You should always be on your guard when interacting with other people). By some mistake, general trust and caution were measured on a 5-point scale in Canada and on a 7-point scale in Japan. For the data analyses, the Japanese data were rescaled so that the scores would distribute from 1 to 5 (see supplementary R Markdown HTML file for more details).

(ix) Psychopathy (Criterion #3)

As we already noted that one of the most important proximate emotions of forgiveness is empathy (Fehr et al., 2010). Psychopathy is characterized by a lack of empathy (Levenson, Kiehl, & Fitzpatrick, 1995). Consistent with this characterization, Giammarco and Vernon (2014) found a negative correlation between psychopathy and trait forgivingness. Therefore, we included the Primary and Secondary Psychopathy Scale (Levenson et al., 1995; Osumi, Kanayama, Sugiura, & Ohira, 2007). According to Levenson et al. (1995), primary psychopathy items were developed to assess selfishness, an uncaring trait, and manipulative posture toward others (e.g., For me, what's right is whatever I can get away with). Secondary psychopathy items were developed to assess impulsivity and a self-defeating lifestyle (e.g., I don't plan anything very far in advance). These items were measured on a 4-point scale.

Original Project

The original project included a wider range of measures than reported in this study (see Ishii et al., 2018; Matsunaga et al., 2017; Matsunaga et al., 2018, for already-published outputs

from this project). In the original study, participants provided for their nail samples for genetic polymorphism analyses in both Canada and Japan. Japanese participants also engaged in a series of economic game experiments and provided their saliva samples for hormone analyses. Although we do not explain details of the procedures of these parts of the project, we list the all individual difference variables below. The Japanese study included more scales than the Canadian study. The scales included in both the Canadian and Japanese study were denoted by "C&J" and the scales included only in the Japanese study were denoted by "J."

List of the Scales Included in the Original Project

1. BIS/BAS Scale (Carver & White, 1994) (C&J). This scale was administered both in Canada and Japan. The Japanese version was developed by Takahashi et al. (2007).
2. Sense of Control Scale (Lachman & Weaver, 1998) (C&J). The Japanese version was adapted from Kitayama, Karasawa, Curhan, Ryff, and Markus's (2010) study.
3. Brief COPE Scale (Carver, 1997) (C&J). The Japanese version was adapted from Mojaverian, Hashimoto, and Kim's (2013) study.
4. Dialectical Self Scale (Spencer-Rodgers, Srivastava, Boucher, English, Paletz, & Peng, 2015)) (C&J). This scale was translated into Japanese by members of the project team.
5. Independent and Interdependent Self-Construals Scale (Singelis, 1994) (C&J). The Japanese version was adapted from Heine's (1996) study.
6. Circumplex Scales of Interpersonal Values (Locke, 2000) (C&J). The Japanese version was Miyamoto and Wilken (2010).
7. Interpersonal Reactivity Index (Davis, 1983). The Japanese version was developed by Aketa (1999).
8. Moral Foundations Questionnaire (Graham et al., 2011). The Japanese version was

adapted by Konishi, Oe, Shimizu, Tanaka, and Ohtsubo's (2017) study.

9. Primary and Secondary Psychopathy Scale (Levenson et al., 1995) (C&J). The Japanese version was developed by Osumi et al. (2007).
10. Rosenberg's Self-Esteem Scale (Rosenberg, 1965) (C&J). The original English version was translated into Japanese by the authors.
11. Trait Forgivingness Scale (TFS) (Berry et al., 2005). The Japanese version was developed by Ohtsubo et al. (2015).
12. Ji, Zhang, and Nisbett's (2004) categorization task, which was designed to measure the cultural differences in reasoning (J). The original English version was translated into Japanese by the authors.
13. Trust and Caution Scale (Yamagishi & Yamagishi, 1994) (C&J). Yamagishi and Yamagishi (1994) developed both the English and Japanese versions.
14. UCLA Loneliness Scale (Russell et al, 1980) (C&J). The Japanese version was developed by Moroi (1992).
15. Autism-Spectrum Quotient (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001) (C&J). The Japanese version was developed by Wakabayashi, Tojo, Baron-Cohen, and Wheelwright (2004).
16. Berkeley Expressivity Questionnaire (Gross & John, 1995; 1997) (C&J). The original English version was translated into Japanese by the authors.
17. Horizontal and Vertical Individualism and Collectivism Scale (Singelis, Triandis, Bhawuk, & Gelfand, 1995) (C&J). The Japanese version was developed by Ohashi (2004).
18. Raven Advanced Progressive Matrices (Raven, Raven, & Court, 1998) (J). The

instructions were delivered in Japanese.

19. NEO Five-Factor Inventory (Costa & McCrae, 1992) (C&J). The Japanese version was developed by Shimonaka, Nakazato, Gondo, and Takayama (1999).
20. Reading the Mind in the Eyes Test (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997) (J). The Japanese version was adapted from Adam et al.'s (2010) study.
21. Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) (C&J). The Japanese version was developed by Shimai, Otake, Utsuki, Ikemi, and Lyubomirsky (2004). The Japanese version of this scale was followed by hypothetical vignettes to assess participants' situation-dependent happiness.
22. Delay discounting task reported in Ishii et al. (2018) (J).
23. Subjective SES Scale (Adler, Epel, Castellazzo, & Ickovics, 2000) (C&J). The Japanese version was adapted from Part et al.'s (2013) study.
24. The number of moves were also assessed following Oishi and Schimmack's (2010) study (J).
25. Demographic variables, such as gender and age, were assessed at the end of the session. The contents of the demographic variable questionnaire slightly differed in the two countries.

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Table S1

Means, Standard Deviations, and Cronbach's α Coefficients of the Variables of Interest in Canada and Japan, and Cultural Differences (the Levels of the Significance Were Adjusted for Multiple Comparisons by the Bonferroni Method)

	Canada			Japan			Canada-Japan Comparison				
	α	Mean	*SD*	α	Mean	*SD*	*t*-value	*df*	*p*-value[a]		Cohen's *d*
Dispositional Variables											
(i) Trait Forgivingness	.84	3.34	0.71	.79	2.81	0.61	7.80	358.36	< .00005	***	0.79
(ii) Subjective Happiness	.88	4.79	1.26	.81	4.69	1.02	0.86	345.07	.390		0.09
(iii) Big Five Personality											
Agreeableness	.78	31.69	6.54	.72	28.76	5.82	4.68	391	< .00005	***	0.47
Conscientiousness	.85	29.96	7.15	.80	24.84	6.92	7.19	391	< .00005	***	0.73
Extraversion	.83	29.59	6.97	.81	23.81	7.17	8.06	391	< .00005	***	0.82
Neuroticism	.89	26.29	9.05	.84	31.37	7.69	−5.93	355.10	< .00005	***	0.60
Openness	.75	30.20	6.28	.71	28.95	6.14	2.00	391	.046		0.20
(iv) Self-Esteem	.93	4.29	1.01	.89	3.55	0.95	7.49	391	< .00005	***	0.76
(v) Empathy											
Empathic Concern	.85	3.79	0.75	.36	3.05	0.52	11.08	313.76	< .00005	***	1.12
Perspective Taking	.78	3.57	0.68	.63	3.04	0.63	8.00	391	< .00005	***	0.80
Personal Distress	.79	2.54	0.70	.73	3.00	0.75	−6.18	377	< .00005	***	0.64
Fantasy	.85	3.54	0.84	.55	3.19	0.64	4.68	333.08	< .00005	***	0.47

(Table 1 *cont'd*)

(vi) BIS/BAS											
BIS	.77	3.08	0.53	.82	3.15	0.58	−1.19	391	.236		0.12
BAS	.78	3.07	0.35	.80	2.97	0.41	2.75	390.81	.006		0.28
(vi) Loneliness	.93	1.83	0.52	.91	2.03	0.49	−3.94	392	.00010	**	0.40
(viii) Trust											
General Trust	.77	3.20	0.66	.75	3.01	0.64	3.00[b]	392	.003		0.30
Caution	.63	3.78	0.59	.71	3.56	0.57	3.72[b]	392	.00023	**	0.37
(ix) Psychopathy											
Primary Psychopathy	.84	1.83	0.42	.79	2.15	0.41	−7.66[c]	392	< .00005	***	0.77
Secondary Psychopathy	.61	1.98	0.40	.63	2.41	0.49	−9.66[c]	391.54	< .00005	***	0.98

Notes. [a] The *p*-values reported in this column were not adjusted for multiple comparisons. Therefore, the significance level of each test was evaluated against .0026, .00053 and .000053, which correspond to .05 (*), .01 (**), and .001 (***), respectively. [b] Trust and caution were measured on a 5-point scale in Canada and on a 7-point scale in Japan. The Japanese scores were adjusted to distribute from 1 to 5. [c] The Japanese psychopathy scales consisted of fewer items than the original English scale.

Table S2

Correlation Matrices of the Variables of Interests (Except Trait Forgivingness) within Each Country (Canadian Correlations Are above the Diagonal Cells and Japanese Correlations Are below the Diagonal Cells)

	1. HA	2. A	3. C	4. E	5. N	6. O	7. SE	8. EC	9. PT	10. PD	11. FS	12. BI	13. BA	14. LO	15. TR	16. CT	17. PP	18. SP
1.		0.16	0.34	0.59	-0.65	-0.16	0.76	0.08	0.04	-0.25	-0.17	-0.41	0.28	-0.64	0.28	-0.11	-0.01	-0.42
2.	0.32		0.08	0.10	-0.03	0.18	0.06	0.57	0.40	0.13	0.07	0.11	-0.21	-0.18	0.29	-0.34	-0.64	-0.30
3.	0.22	0.15		0.15	-0.38	-0.12	0.40	-0.03	0.03	-0.28	-0.10	-0.08	0.18	-0.30	0.10	-0.10	-0.06	-0.55
4.	0.52	0.40	0.26		-0.31	-0.15	0.47	0.19	-0.05	-0.12	0.00	-0.30	0.44	-0.51	0.21	0.01	0.08	-0.17
5.	-0.45	-0.22	-0.23	-0.32		0.16	-0.74	0.11	0.02	0.51	0.29	0.66	-0.10	0.47	-0.15	0.18	-0.14	0.37
6.	0.21	0.05	-0.08	0.15	-0.08		-0.15	0.30	0.37	0.12	0.47	0.12	0.00	0.06	0.05	-0.04	-0.26	0.00
7.	0.62	0.12	0.32	0.37	-0.59	0.24		-0.11	-0.05	-0.34	-0.25	-0.44	0.24	-0.60	0.29	-0.16	0.07	-0.43
8.	0.14	0.16	0.22	0.21	-0.03	0.10	0.12		0.41	0.21	0.29	0.22	0.09	-0.18	0.12	-0.22	-0.55	-0.12
9.	-0.12	0.20	-0.04	-0.09	0.25	0.02	-0.18	0.30		0.06	0.16	0.08	-0.01	-0.06	0.01	-0.06	-0.36	-0.26
10.	-0.11	0.04	-0.11	-0.07	0.28	0.00	-0.16	0.30	0.06		0.21	0.45	-0.05	0.17	0.02	0.07	-0.06	0.31
11.	0.14	0.02	0.08	0.14	0.00	0.25	0.02	0.22	-0.15	0.31		0.27	0.03	0.08	0.08	-0.10	-0.22	0.03
12.	-0.37	-0.04	-0.11	-0.30	0.72	-0.13	-0.43	-0.03	0.30	0.26	0.05		-0.07	0.23	-0.09	0.02	-0.24	0.10
13.	0.20	0.07	0.18	0.38	0.01	0.27	0.19	0.35	0.12	0.00	0.16	-0.08		-0.18	-0.01	0.21	0.22	0.02
14.	-0.55	-0.41	-0.22	-0.59	0.41	-0.11	-0.42	-0.22	0.00	0.13	-0.08	0.32	-0.24		-0.28	0.13	0.07	0.42
15.	0.26	0.49	0.04	0.35	-0.23	0.05	0.20	0.14	0.02	0.05	0.05	-0.08	0.15	-0.31		-0.39	-0.15	-0.11
16.	-0.11	-0.22	0.05	-0.09	0.25	-0.06	-0.02	0.00	0.08	0.08	0.04	0.19	0.14	0.15	-0.31		0.26	0.10
17.	-0.10	-0.43	-0.05	-0.13	0.05	-0.07	0.12	-0.11	-0.01	-0.08	-0.11	0.00	0.15	0.19	-0.28	0.28		0.32
18.	-0.26	-0.18	-0.66	-0.18	0.36	-0.02	-0.27	-0.23	0.01	0.06	-0.11	0.17	-0.11	0.24	-0.04	-0.05	0.07	

Shaded cells indicate significance within each country after Holm's adjustment (darkest .001; second darkest .01, least darkest .05). HA = happiness, A = agreeableness, C = conscientiousness, E = extraversion, N = neuroticism, O = openness to experience, SE = self-esteem, EC = empathic concern, PT = perspective taking, PD = personal distress, FS = fantasy, BI = behavioral inhibition system (BIS), BA = behavioral activation system (BAS), LO = loneliness, TR = trust, CT = caution, PP = primary psychopathy, SP = secondary psychopathy.