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Self-Construal, Social Support, and Loneliness in Japan

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Abstract We examine the effects of self-construal and social support in friendships on loneliness using data from a random sample of residents in Tokyo, Japan. We find that the relationship between interdependent and independent self-construal is not orthogonal, as found by studies in the West, but moderately positive. Net of independence, interdependence significantly and positively predicts perceived social support, but not vice versa. By comparison, neither interdependence nor independence completely absorbs the protective effect of the other on loneliness. Our full models including other variables (e.g. gender, age, and extraversion personality) show that interdependence matters more in explaining perceived social support and loneliness. Moreover, perceived social support partially mediates the negative effect of interdependence on loneliness. We discuss implications of these and other related findings for future research on self-construal and subjective wellbeing across societies.

Keywords Self-construal · Social support · Loneliness · Japan

Having supportive interpersonal relationships (e.g., friendships) is critical to one's well-being. Much research shows that social relationships provide buffers from stress and improve psychological well-being, which in turn produces positive physiological responses (Cohen 2004). On the other hand, loneliness is associated with lower self-esteem, higher depression, and even physiological decline (Hawkley and Cacioppo 2007). It is then worthwhile to study what factors explain one's perceptions of social relationships and loneliness, especially in the Eastern societies where well-being is

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viewed as "an inter-subjective state that is grounded in mutual sympathy, compassion, and support" (Uchida et al. 2004, p. 226). Because a sense of social connectedness and self-affirmation are both likely to be associated with the perceptions of social relationships and loneliness, it makes sense to focus on self-construal, i.e., how individuals define themselves vis-à-vis others (Cross et al. 2011; Markus and Kitayama 1991).

With data from the Survey of Midlife Development in Japan (MIDJA), we examine correlates of individuals' perceptions of friendships and loneliness in Tokyo, with a focus on interdependence and independence. As Japan's largest city, Tokyo is an interesting case study. On the one hand, Japanese social norms encourage individuals to firmly anchor their sense of self in connections to others (Markus and Kitayama 1991). However, there is considerable within-culture variation, and Tokyo ranks quite low on the Japanese Collectivism Scale (Yamawaki 2012). Tokyo (in eastern Japan) is often compared with Osaka (in western Japan), the third largest city. The conventional wisdom is that Tokyoites are polite, but aloof and indifferent to others, whereas Osakans are crude, but open and social (Karan 2005). Neither of the stereotypes fits quite with how interpersonal relationships in Japan are portrayed by commentators of kinds. Certainly, it is misleading to dismiss interdependence and focus on independence as a facilitator of social support among Tokyoites (or any other group of Japanese) just because they are highly independent (Ogihara and Uchida 2014).

A random sample data from Tokyoites allow a study of how between-individual variation in interdependence and independence are associated with perceived of social relationships. Despite the increased awareness of cross-cultural variation in self-construal, limited knowledge exists on affective consequences of interdependence and independence at the individual level (Cross et al. 2011, p.157). Specifically, we ask the following questions: Do individuals with greater interdependence have higher or lower perceptions of social support? Do individuals with higher interdependence experience more or less loneliness? Our study builds on previous research in two ways. First, we use direct measures of self-construal rather than their cultural proxies. Second, we do not assume that interdependent construal and independent construal are opposites but consider the potential for individuals to incorporate both. We first turn to conceptualization of interdependent and independent self-construal and previous studies on the effects of self-construal on social relationships and loneliness.

Background

Interdependent vs. Independent Self-Construal

The term self-construal, coined by Markus and Kitayama (1991), refers to the way in which individuals construe their selves. Self-construal is a multidimensional self-concept based upon the assumption that people can have different self images (Levine et al. 2003a; Singelis 1994). Understanding of one's self in part relates to the degree to which people see themselves as distinct from others or as connected with others (Markus and Kitayama 1991, p. 226).

Psychologists and other researchers are increasingly interested in cross-cultural comparisons of how individuals see themselves, which may in turn affect their perceptions, motivations, and behaviors (Levine et al. 2003a; Markus and Kitayama 1991).

Independence and interdependence are primary constructs for such comparisons. Independent self construal is the self-definition that is "bounded, unitary, stable," and separate from social context (Singelis 1994, p. 581). It is the tendency to see oneself as distinct, unique, autonomous and invariant across contexts (Levine et al. 2003a). Meanwhile, interdependent self-construal is the self-definition that is "flexible, variable," (Singelis 1994, p.581) and connected to, or in harmony with, social contexts (Kanagawa et al. 2001). Markus and Kitayama (1991), reviewing cross-cultural studies on the self, argue that Westerners are more likely than non-Westerners to see themselves as separate from others, unique, autonomous, and idiocentric. By contrast, people in East Asia, Africa, Latin America and Southern Europe typically see themselves "as part of an encompassing social relationship" (p.227), holistic, collective, and allocentric. One contribution of self-construal research is to challenge the Eurocentric understanding of self-definition and the universality assumption on how self-construal affects various human experiences (Markus and Kitayama 1991, p.225).

Self-construal by definition is an individual-level construct, and is related to but distinguished from the normative dimensions of culture such as individualism and collectivism. In short, it is the cultural orientation of a person (Levine et al. 2003a). Yet, researchers often lack direct measures of self-construal and use nationality of study participants (e.g., Japan vs. the US) as a proxy for a certain type of self-construal. As noted by Cross and her associates (2011), Markus and Kitayama (1991) start with the assumptions that interdependent self-construal is predominant for Japanese, and that independence is more common among individuals in the US, and therefore attribute the various Japan-US differences reported in the literature in cognition, emotion and motivation to the initially assumed cross-national difference in self-construal. However, the contrast between Japan as collectivistic and the US as individualistic greatly overlaps with the overall (or average) inclinations for interdependence vs. independence among members of the respective societies (Cross et al. 2011, p.143). Therefore, when or if possible, self-construal constructs should be measured at the individual level. After all, these constructs are firmly tied to a person or the self. Markus and Kitayama (1991, p.225) themselves caution that in the same culture, people differ in the extent to which they see themselves separate from or connected with others. That is, some people in a collectivist society are likely to score quite high on independence, just as some in an individualist society may have high interdependence. Moreover, individual-level measures of self-construal allow researchers to assess and incorporate the orthogonality between interdependence and independence in line with self-construal theory into their data analysis. That is, if interdependence is uncorrelated, or only moderately correlated, with independence, it is misleading to consider interdependence and independence on a continuum (Cross et al. 2011) although some earlier studies did just that.

Self-Construal and Perceptions of Social Relationships

The degree to which individuals see themselves as distinct from or connected with others has implications for their perception of social relationships. Interdependence may motivate individuals to pay more attention to the expectations of others in immediate social environments in interpersonal relationships (Levine et al. 2003a; Markus and Kitayama 1991; Singelis 1994). By comparison, individuals with high

independence may rather reference their inner attributes (e.g., desires, preferences, abilities, and motives) in interacting with "in-group" or close others (Markus and Kitayama 1991, p.226). Research on communication styles informs us about specially how self-construal is associated with the quality of interpersonal relationships, suggesting that both independent and interdependent self-construal are beneficial or damaging for interpersonal communication. For example, individuals who score higher on interdependence tend to score lower on argumentativeness, whereas highly independent individuals are likely to have less communication apprehension, defined as the "level of fear or anxiety associated with either real or anticipated communication with another person or persons" (Kim et al. 2001, p.385; see also Sinclair and Fehr 2005).

Although self-construal is an individual-level construct, the effect of self-construal, be it interdependence or independence, on the perception of social relationships need be understood within cultural contexts (Uchida et al. 2008). Whereas in the West, maintaining independence and minimizing interdependence is often considered necessary for functional social relationships, in the East, connecting and attaining interdependence with "in-group" others is expected for relationships (Kitayama and Markus 2000; Lu and Gilmour 2004). Confucian, or deep, harmony (Li 2008, p.91) prescribes that members of society reconcile their differences cooperatively with benevolence, righteousness and rituals of propriety (Wei and Li 2013; Li 2006, 2008). Certainly, social relationships and emotional support they provide are important in various cultures. Yet, there may be cultural differences in what is preferred as a form of social relationships (e.g., social interactions). Burleson and Mortenson (2003) compare the preferred approaches to supporting distressed friends between Euro-American and Chinese international students attending a large US university. On one hand, they find that although both Americans and Chinese approve highly person-centered comforting messages, and prefer solace behaviors intended to elicit positive emotions from friends to other approaches such as escape behaviors intended to avert negative emotions. On the other hand, they also find the intercultural difference in that Chinese are more tolerant than Americans of less person-centered comforting strategies, and the avoidance-based support approach.

In Japan, social institutions (e.g., family, schools, workplaces, and neighborhood associations) exert great influence on how individuals interact with one another. Activities involving social interaction, whether they are school activities, job tasks, or neighborhood cleanups, are organized in groups. Early in life, Japanese are thought to internalize interdependent self-construal as they participate in group activities, mainly at school, whose outcomes are dependent on members' respect for (if not rigid conformity to) group norms and cooperation. The internalized self-construal is thought to allow individuals to evaluate support received without scrutinizing its specific content because the provision of help is more or less taken for granted (Burleson and Mortenson 2003) and more readily and uncritically appreciated. This type of social interaction entails high-context communication where people figure out others' desires and intentions by indirect means rather than directly telling each other (Hall 1976; Matsunaga and Imahori 2009; Singelis 1994). The large majority of Japanese prefer this kind of communication (Matsunaga and Imahori 2009), presumably to maintain social harmony or avoid interpersonal conflict. Thus, we expect interdependent self-construal to have a positive effect on the perception of supportive social relationships (Hypothesis 1).

Some researchers (e.g., Kağitçibasi 1996; Kim and Raja 2003; Mortenson et al. 2009) provide an alternative and yet compatible perspective on self-construal and the perception of support relationships that both independence and interdependence are basic human needs. Mortenson et al. (2009), for instance, find that independence and interdependence are significantly and similarly associated with the endorsement of social support seeking behaviors for their Euro-American and Chinese study participants. Indeed, Japanese score higher on independence than interdependence, measured as explicit beliefs (Kitayama et al. 2009, p.249).

As members of a collectivistic society, Japanese likely internalize the normative value of interdependence early in life as a reference point in defining themselves, but they may also gradually become sensitized to the independent self-construal as a complement or an alternative (Takata 2007, 2004). For at least two decades, people in Japan have been profoundly affected by free-market forces, privatization, and globalization backed by neoliberal ideologies and policies. Neoliberalism underlies the new normative self-definition resonating more with independence than interdependence. Independence appears to serve as a protective factor for social anxiety (Okazaki 1997) and to be linked to greater self-esteem (Kim et al. 2003). Independence can then facilitate high quality social relationships by reducing potential strain. But the effect of independence on social relationships may be moderated by cultural context. Ogihara and Uchida (2014) show that independent orientation adversely predicts number of close friends for Japanese. They argue that Japanese are yet to have learned appropriate ways to buffer the potentially isolating effect of independence. Based on this argument, we expect independence to have a negative effect on the perception of supportive social relationships (Hypothesis 2).

Self-Construal and Loneliness

We focus on loneliness as an indicator of well-being. Loneliness is a broad range of feelings—those of isolation, disconnectedness, and alienation—that one is deprived of desirable ties to others, or that one's "network of relationships is either smaller or less satisfying than desired" (Jones 1981, p.295; see also Peplau and Perlman 1982). Loneliness reflects the gap between desired and actual social relationships (Hughes et al. 2004, p.657). These two constructs are likely to be intertwined and hard to measure separately. Survey instruments thus often depend on self-assessment of loneliness as perceived social relationship deficits (see *Dependent variables* for detail).

Loneliness is experienced universally, although members of collectivist societies report greater loneliness than those of individualist societies (Lykes and Kemmelmeier 2014). Much of the loneliness research is based in the West, but existing cross-cultural evidence suggests that self-assertion (or the lack thereof) is associated with loneliness quite differently across societies. Chen et al. (2004), in their study of children age 9 to 12 in Brazil, Canada, China, and Italy, find that aggression positively predicts loneliness only for Chinese children, while shyness-sensitivity is associated with loneliness of children in Brazil, Canada, and Italy, but not in China.

For our focus on the role of self-construal in loneliness among Japanese, we are particularly interested in examining the effect of interdependent self-construal on loneliness. Despite, or rather because of, the social expectation for reconciling interpersonal differences, Japanese may be made "more aware of conflicts with others,

conflicts between their self-interests and obligations, and so forth" (Lebra 1984, p56). Loneliness can then be an emotional response to one's inability to connect with others that are potentially sanctioned with penalties (e.g., unfavorable references for jobs or other pursuits, and lower job evaluation scores).

But again, one cannot conflate the cultural difference and differences in self-construal among individuals. Lack of connectedness with others and poor self-concept are at the core of lonely people's experiences (Hughes et al. 2004; Loucks 1980). Among Japanese, those with higher interdependence may be more positively biased about the desirability of their social ties taken as a whole, net of their perceptions of relationship support/strain. As discussed earlier, interdependent self-construal may allow individuals to evaluate support they receive uncritically and with full acceptance (Burleson and Mortenson 2003). We expect that individuals who score higher on interdependence may find their social relationships more desirable and thus experience less loneliness (Hypothesis 3).

There is limited research on the effects of interdependent and independent self-construal on loneliness, but some scholars have examined variables related to the self concept, such as other-focus and self-focus, as potential predictors. Goswick and Jones (1981), in their study of US undergraduates, found lonelier students to be more focused on their own feelings and reactions than those of others in social situations (e.g., seeing old friends). They speculated that self-focus may interfere with the capacity to take in interpersonal feedback that is potentially conducive to loneliness reduction. Likewise, Berg and Peplau (1982) showed a negative association between other-attentiveness and loneliness among female (but not male) students. However, in a study using data from Australian residential college students, Green and Wildermuth (1993) found neither other- nor self-focus to be a significant predictor of loneliness, controlling for interpersonal needs. Mixed results from these studies make it difficult to hypothesize the effect of independence on loneliness.

Methods

Data and Sample

This study uses secondary data analysis with the Survey of Midlife Development in Japan (MIDJA)[1] conducted from May to October of 2012. Its original survey was administered from April to September of 2008 to a random sample (stratified by gender and 10-year age groups) of adults age 30 to 79 in the Tokyo region (ICPSR 2011). The MIDJA was selected because it contains items to measure our variables of interest: self-construal, perceptions of social relationships, and loneliness, along with the standard socio-demographic characteristics. This study uses data from the

[1] The MIDJA is a sister survey to the National Survey of Midlife in the United States (MIDUS) (ICPSR 2010). The MIDJA and MIDUS share many instruments to facilitate US-Japan comparisons of various issues, although the MIDJA data were collected for a local sample unlike MIDUS data that were collected for a national sample. Unfortunately, we cannot take advantage of this feature because the loneliness scale was not used in MIDUS.

follow-up survey because our preferred, multiple-item measure of loneliness was not available in the first wave.[2]

Interviewers first contacted prospective, randomly selected respondents by telephone, and then visited the residences of those who had agreed to participate to obtain written consent and deliver self-administered questionnaires (ICPSR 2011). The mode of surveys used by MIDJA suits our study because self-administration is known to work better than other modes of surveys with multiple-item questions on loneliness (Hughes et al. 2004). Interviewers returned to pick up the questionnaires a week later (ICPSR 2016). This deliver-and-pick-up method is a convention in Japanese social surveys, and was also used in the follow-up. At each wave, the survey participants received 3000 yen (approximately US$30) (ICPSR 2016). The 2008 MIDJA (original survey) had a response rate of 56.2% (1027 of 1827) (ICPSR 2011). The 2012 MIDJA had a response rate of 64% (657 of 1027) (ICPSR 2016).[3] After cases with missing values were deleted, the final analysis sample size was 614.

Measures

Dependent Variables

The dependent variables are perceived social relationships and loneliness, and are measured with multiple-item questions. In the final data analysis, loneliness is our major dependent variable, and the variable on perceived social relationships is a mediator between our key predictor, i.e., self-construal, and loneliness.

We use items on friend support/strain to measure perceived social relationships. Perceived friend support is based on two 4-item questions on the level of support the respondents expect to receive from and give to their friends. The first question concerns expected support from friends, and the second expected support to friends. The first question asks the respondents how much their friends a) really care about them, b) understand how they feel about things, c) can be relied on for help if they have a serious problem and d) are someone they can open up to if they need to talk about their worries. Response options range from 1 (=not at all) to 4 (=a lot). The second question was asked the same way except for the reversed roles of respondents and their friends. A factor analysis with PAF of these eight indicators derived a single factor where all items had a factor loading larger than .70 (eigenvalue = 4.46). Alpha coefficient is .91.

Perceived friend strain is measured with two 4-item questions on the frequency of strain on respondents imposed by their friends (the first question) and vice versa (the second question). The first question asks respondents how often their friends a) make too many demands on them, b) criticize them, c) let them down when they are counting

[2] Our preliminary analysis indicated that the attrition of respondents was unrelated to our study variables for the most part. The exceptions are perceived social relationships, marital status and the presence of children. Although there is no significant difference in friend support and friend strain by attrition status, the "stayers" score somewhat higher than "leavers" on the average score of social relationships (5.9 vs. 5.8, $p < .05$). Married respondents are significantly more likely to complete the follow-up than unmarried respondents, and so are the respondents with children ($p < .01$). See Appendix Table 5.

[3] 135 of 1027 respondents to the 2008 MIDJA were excluded from the follow-up survey because their address was invalid, they moved, they were not home at the time of interviewer contact, they had health issues, or they were found to be deceased.

on them, and d) get on their nerves. The second question is identical to the first except for the reversed positions of respondents and their friends. A factor analysis with PAF of these eight indicators derived a single factor where six items had a factor loading .70 or larger and two items factor loadings of .58 and .52 (eigenvalue = 3.85). Alpha coefficient is .88.

Based on the factor analyses reported above, we determined that both friend support and friend strain are measured one-dimensionally. We constructed a composite scale by subtracting each respondent's average score of friend strain from their average score of friend support. Higher scores indicate higher ratings of perceived (positive) social relationships.

The 2012 MIDJA measures loneliness with the UCLA Loneliness Scale (Russell (1996) cited in ICPSR 2016, Documentation of Scales and Constructed Variables in MIDJA 2, p.60; see also Russell et al. 1980). The MIDJA adopted a 7-item question where respondents were asked to indicate, on a scale from 1 (=never) to 4 (=often), the frequency of feeling the way described in the following statements: a) There is no one I can turn to; b) No one really knows me well; c) I feel isolated from others; d) There are people who really understand me; e) People are around me but not with me; f) There are people I can talk to; g) There are people I can turn to. The original scores are reversed for items d, f and g so that the higher scores indicate more loneliness. Alpha coefficient is .79. Following the same steps described above for the items on perceived friend support/strain, we derived two factors (eigenvalues = 2.64 and 1.45). Items d, f and g, which are related to the availability or "quantity" of social ties, load higher than the rest (i.e., .65, .91 and .91 vs. .05, .12, .26, and .10) on the first factor, while indicators, a, b, c and e, tapping into the "quality" of social ties, load higher than the rest (i.e., .75, .87, .59 and .66 vs. .11, .07, and .12) on the second factor. These results are consistent with the definition of loneliness discussed earlier, i.e., the feeling that one's social network is either smaller or lower in quality than desired. We construct our variable on loneliness by averaging scores across the seven items.

Although loneliness is often treated one-dimensionally, researchers have also identified distinct types of loneliness such as between emotional and social loneliness (Green et al. 2001; Weiss 1973). Weiss (1973) argued that individuals experience emotional loneliness when they lose or lack an intimate relationship (e.g., marital union), whereas social loneliness results from the absent or insufficient network of broader social ties. Sub-dimensions of loneliness, i.e., the closeness and extent of social relationships, captured with the UCLA scale are known to correlate with emotional and social loneliness, respectively (Russell et al. 1984). The 2012 MIDJA lacks distinct measures of emotional and social loneliness. Alternatively, both the original (2008) and 2012 MIDJA asked the respondents, "During the past 30 days, how much of the time did you feel lonely?" on a scale from 1 (=none of the time) to 5 (=all the time). The Japanese term *kodoku* (孤独) for loneliness used in the original questionnaire literally means being all alone with nobody to count on. It is often coupled with the term *sabishii* (sad), suggesting that *kodoku* may be closer in meaning to emotional than social loneliness. We consider this item as an alternative measure of loneliness. The temporal stability of loneliness has been noted in some studies (e.g., Hughes et al. 2004). We find the repeated secondary measures are moderately correlated at .5 ($p < .0001$). Meanwhile, this measure of loneliness correlates with loneliness measured on UCLA Loneliness moderately ($r = .35$, $p < .001$).

Independent Variables

Interdependent and independent self-construal are our main independent variables. The MIDJA includes 12- and 10-item questions, respectively, for these constructs, asking the respondents to rate their agreement with the statements about both types of self-construal on a scale from 1(=strongly disagree) to 7(=strongly agree) (ICPSR 2016, see also Appendix Table 6). The scale is reversed for some items so that higher scores indicate stronger inclinations for interdependence or independence. Research on the definition and measures of interdependence and independence suggests that neither construct is one-dimensional (Cross et al. 2011; Levine et al. 2003a, b). For instance, Cross et al. (2000) and Kashima et al. (1995) identify two dimensions of interdependence, i.e., collective and relational, and two dimensions of independence, i.e., agency and assertiveness. As discussed earlier, we are interested in the collective dimension of interdependence and the agency dimension of independence.

Of the twelve items for interdependent self-construal, we are interested in those that capture the notion of harmony, or group based interdependence. At first glance, the following two items appear to be the best fit: "It is important for me to maintain harmony or smooth relationships within my group"; "It is important to me to respect decisions made by the group." With this tentative observation in mind, we did a factor analysis with the same approach used for the dependent variables. Although this derived one factor (eigenvalue = 2.75), factor loadings are low (<.5 for 7 of 12 items). Alpha coefficient is .76. The unsatisfactory internal consistency and factor convergence prevents us from utilizing all 12 items to gauge the standard construct of interdependence (Vignoles et al. 2016). We thus resort to the averaged score of the two items mentioned above, while considering it "collective interdependence" rather than interdependence in general.

Of the ten items designed to measure independence, two items seem to capture well the notion of agency: "Having a lively imagination is important to me"; "It is important to have my own ideas." Here, too, although the factor analysis led to a one-factor solution (eigenvalue = 2.18), factor loadings are low (<.5 for 6 of 10 items). Alpha coefficient is .71. Thus, we again resort to the average score of the two items initially selected, while considering it "agency independence."

Control Variables

Our dependent variables, individuals' perceived social relationships and loneliness, are subjective and known to be relatively stable traits. Meanwhile, objective social interaction and isolation are not only reliable predictors of the subjective quality of social relations (Hughes et al. 2004), but also likely to be associated with inclinations for interdependence and independence. We use marital status (1 = married; 0 = single) and the presence of children (1 = yes; 0 = no) as indicators of objective social interaction/isolation.

Age (in years), gender (1 = female; 0 = male), and extraversion personality are also included. Some studies have found that older persons tend to experience more loneliness (Dykstra 2009). Women may perceive more supportive social relationships (Vandervoort 2000), gain more from relationship harmony in terms of subjective

wellbeing (Reid 2004), and experience reduced loneliness.[4] Meanwhile, the chance of having any children increases with age, and women are less likely than men to be married in large cities such as Tokyo. Finally, extraversion personality is included as a reliable negative predictor of loneliness as well as a close correlate of independence (Cheng and Furnham 2002). Extraversion is measured with a 5-item question that asked respondents to indicate how well, on a scale from 1 (=not at all) to 4 (=a lot), they were described by the adjectives: "outgoing," "friendly," "lively," "active," and "talkative." We average scores across the items.

Findings

Descriptive Analysis

Table 1 lists the means, standard deviations and ranges of the study variables. The distribution of data on perceived social relationships is approximately normal with the mean on the upper half of the scale. In contrast, loneliness, based on both the UCLA and "negative affect" measures, is slightly positively skewed with means of both loneliness variables well below the mid-point. On average, MIDJA respondents seem to be reasonably satisfied with their social relationships and experience low levels of loneliness. The mean scores of interdependence and independence are 5.3 and 5.6, respectively, exceeding the mid-point of 4. Interestingly, the mean is higher on independence than on interdependence (with the latter being more in line with the collective social norms).

Pearson correlation coefficients for our study variables are in Table 2. Each predictor significantly correlates with the score on the UCLA Loneliness Scale in the expected direction. The same can be said about the alternative measure of loneliness except for sex and age. Likewise, there are significant positive correlations between perceived social relationships and all other variables with the exceptions of marital status and age. Interdependence moderately and positively correlates with independence ($r = .43$, $p < .0001$), which is consistent with the contention that interdependence and independence should not be considered opposite ends of a continuum (Cross et al. 2011), but is also inconsistent with the orthogonality between the constructs found in earlier studies.

Multivariate Regression Analysis

Table 3 shows results from the ordinary least squares (OLS) models predicting the perception of social relationships (Models 1 & 2) and the score measured on the UCLA Loneliness Scale (Models 3, 4, & 5). Consistent with Hypothesis 1 that those who score higher on interdependence see their social relationships more positively, the effect of interdependence is positive and significant at the .001 level, with the control variables (Model 1) or without them (Model 2). A one-unit increase in the interdependence score measured on a 7-point scale is associated with an increase of .06 on the social

[4] Given the gender norm that men should be emotionally strong, men may be more reluctant to admit the feelings of loneliness so easily (Borys and Perlman 1985). Our preliminary analysis show no significant gender difference, however, in loneliness measured as negative affect.

Table 1 Descriptive statistics ($N = 614$)

	Mean	SE	Range
Social support	2.90	.013	1,4
Loneliness (UCLA)	1.94	.022	1,4
Lonely (negative affect)	1.62	.035	1,5
Interdependence	5.26	.038	1,7
Independence	5.55	.036	1,7
Married	.72	.018	0,1
Any children	.76	.016	0,1
Female	.52	.00	0,1
Age	58.92	.12	34,85
Extraversion Personality	2.40	.026	1,4

Statistics are computed with Stata's svy commands. We consider stratification by gender and 10-year age groups

relationships score on a 4-point scale (Model 2). The effect of independence is insignificant (Models 1 & 2), failing to support Hypothesis 2 that independence is negatively associated with perceived social support.

The effects of interdependent and independent self-construal variables on loneliness are negative (Model 3–5). When the variables are entered alone (Model 3), the effect of interdependence is significant at the .001 level, and the effect of independence is significant at the .01 level (Model 3). With the inclusion of the control variables (Model 4), the effect of interdependence is significant but somewhat attenuated, while the effect of independence is no longer significant. When we add perceived social relationships to our model (Model 5), the effect of interdependence is significant at a lower threshold ($p < .01$) and becomes much smaller, suggesting that social relationships may mediate

Table 2 Pearson correlations between the study variables

	1	2	3	4	5	6	7	8	9	10
1. Social support	1.00									
2. Loneliness (UCLA)	−.42***	1.00								
3. Lonely (negative affect)	−.21***	.35***	1.00							
4. Interdependence	.22**	−.25***	−.13**	1.00						
5. Independence	.15**	−.22***	−.12**	.43***	1.00					
6. Married	.047	−.12**	−.27***	.17***	.096*	1.00				
7. Any children	.14***	−.12**	−.12**	.056	−.088*	.40***	1.00			
8. Female	.23***	−.17***	.057	−.057	−.094*	−.14***	.035	1.00		
9. Age	.071	.13**	−.011	.074	−.064	−.064	.28***	−.068	1.00	
10. Extraversion	.20***	−.36***	−.27***	.24***	.31***	.072	.044	.050	−.073	1.00

*$p < .05$ **$p < .01$ ***$p < .001$ two tailed

Table 3 OLS regression models of the perception of social support and loneliness ($n = 614$)

	Model 1 Social support	Model 2 Social support	Model 3 Loneliness	Model 4 Loneliness	Model 5 Loneliness	Model 6 Lonely	Model 7 Lonely	Model 8 Lonely
Social support	–	–	–	–	−.537*** (.0638)	–	–	−.450*** (.0991)
Interdependence	.0686*** (.0165)	.0577*** (.0163)	−.117*** (.0282)	−.0946*** (.0261)	−.0636** (.0241)	−.0875* (.0435)	−.0175 (.0387)	.00849 (.0386)
Independence	.0253 (.0166)	.0286 (.0168)	−.0855** (.0286)	−.0509 (.0270)	−.0355 (.0260)	−.0728 (.0425)	−.00798 (.0407)	.00490 (.0408)
Married	–	−.00520 (.0315)	–	−.0463 (.0551)	−.0491 (.0521)	–	−.451*** (.0955)	−.454*** (.0945)
Any children	–	.0817* (.0318)	–	−.173** (.0568)	−.129* (.0545)	–	−.0296 (.0936)	.00720 (.0924)
Female	–	.157*** (.0257)	–	−.192*** (.0420)	−.107** (.0412)	–	.0569 (.0668)	.127 (.0672)
Age	–	.00148 (.000956)	–	.00594*** (.00158)	.00673*** (.00149)	–	−.00135 (.00239)	−.000688 (.00232)
Extraversion	–	.0649** (.0229)	–	−.235*** (.0330)	−.200*** (.0322)	–	−.322*** (.0501)	−.293*** (.0501)
R-square	.054	.146	.077	.221	.304	.021	.137	.163
F-statistic (df_1, df_2)	12.59 (2, 603)	12.48 (7, 598)	24.92 (2, 603)	25.27 (7, 598)	36.34 (8, 597)	5.27 (2, 603)	11.37 (7, 598)	12.79 (8, 597)

Statistics are computed with Stata's svy commands. We consider stratification by gender and 10-year age groups (design df = 604)

* $p < .05$ ** $p < .01$ *** $p < .001$ two tailed

the effect of interdependence on loneliness. This is in line with Hypothesis 3 that those with higher interdependence find their social ties more desirable and thus experience less loneliness.

The effects of control variables are mostly as expected. Parents, women, and those with stronger extraversion personality perceive significantly greater supportive social relationships and significantly reduced loneliness. Older individuals are significantly lonelier. Unexpectedly, the effect of marital status is insignificant in every model. Regression diagnostics (e.g., tests for no omitted variables, linearity, and the assumptions of normal and homoscedastic distribution of residuals) were performed for our models. There was no indication of serious violation of the OLS assumptions.

The last two columns show estimates of Models 6 and 7, comparable to Models 3 and 4, with the alternative measure of loneliness discussed earlier. The association between interdependence (or independence) and loneliness, though negative, is mostly insignificant, suggesting that the predictive power of self-construal depends on how loneliness is measured. Interestingly, unlike in the analysis with the score on the UCLA Loneliness Scale, the effect of being married is negative and significant ($p < .001$). Model diagnostics indicated the violation of the OLS assumptions (e.g., nonlinearity and heteroscedastic residuals). In an additional analysis, we estimated ordered logit models whose results were similar to those from the OLS models reported here.

Based on our OLS estimates from Model 5, we perform mediation analysis to closely assess Hypothesis 3. Table 4 summarizes results from this analysis. Upon inspection of our earlier models of social relationships (Models 1 & 2, Table 3), independence and marital status are omitted as predictors of perceived social relationships here. Bias corrected confidence intervals of the indirect and direct effect of interdependence are obtained with 5000 samples. Because our OLS models meet the

Table 4 Direct, indirect, total effects of interdependence and fit statistics (n = 614)

	Coefficient	Bootstrap SE	Normal CI	Bias-corrected CI
Model estimates:				
Indirect effect	−.036***	.0093	−.055 to −.018	−.056 to −.020
Direct effect	−.064*	.025	−.11 to −.016	−.11 to −.018
Total effect	−.100***	.026	−.15 to −.049	−.15 to −.049
Model fit statistics:				
Likelihood-ratio χ^2	3.185			
CFI	0.996			
TLI	0.971			
RMSEA	0.031			
RMSEA, 90% CI	0.000 to 0.092			
P-value, RMSEA<.05	0.606			
SRMR	0.008			

The analysis builds on Model 5 of loneliness shown in Table 3. For the indirect effect of interdependence on loneliness, independence and marital status are omitted as predictors of perceived social relationships (informed by the estimates of Models 1 & 2, Table 3)

* $p < .05$ ** $p < .01$ *** $p < .001$ two tailed

normality assumption, unsurprisingly, the normal and bootstrapped confidence intervals are quite close.

Our mediation analysis lends partial support to our hypothesis that individuals with higher interdependence find their social relationships more desirable, and consequently, experience reduced loneliness. The indirect effect of interdependence is significant ($p < .01$), while its direct effect is also significant though at a lower threshold ($p < .05$), suggesting that perceived social relationships partially mediate the effect of interdependence on loneliness. Overall, the model fit statistics indicate a good fit. (The likelihood-ratio χ^2 is 3.19 (df = 2, $p = .20$), and we fail to reject at the .05 level that the proposed model fits as well as the saturated model. CFI = .996, TLI = .971, RMSEA = .031, SRMR = .008).

Discussion

We explore a relatively overlooked association between the constructs surrounding the notion of self-construal, i.e., how individuals see themselves vis-à-vis others (Cross et al. 2011), and perceived social relationships and loneliness using data from residents of Tokyo, Japan's capital and largest city. Japan is an interesting country to examine the predictive roles of the self-construal constructs, or interdependence and independence, in subjective qualities of social relationships. As members of a collectivist society, Japanese have many opportunities across life arenas (e.g., family, employment, and community) to internalize the social norm of interdependence. Meanwhile, neoliberalism, as an ideology to legitimatize free-market forces, deregulation of social policies, and globalization, have prevailed in Japan since the mid-1990s, providing a blueprint for the "new" normative self that resonates more with independence than interdependence. In short, Japanese, and particularly those living in urban regions such as Tokyo, are increasingly well-poised to reference both the notions of interdependence and independence in defining themselves. As Oyserman et al. (2009) suggest, culture does not create fixed ways of thinking but rather offers a situated model that individuals can use and adapt.

Indeed, we find a moderately positive association between interdependence and independence. For Japanese, attainment of a mature self often means "to maintain its independence while coexisting with others" (Kamitani 1993, p.855), making it difficult to reference independence without interdependence. Net of independence, interdependence has a significant positive effect on perceived supportive social ties, but not vice versa. This finding is consistent with previous research in the East that shows the importance of interdependence for functional social relationships (Kitayama and Markus 2000; Lu and Gilmour 2004). By comparison, neither interdependence nor independence completely absorbs the effect of the other on loneliness. With the controls, interdependence matters more in explaining the perception of social relationships and loneliness. Perhaps most interesting, we show that interdependent self-construal both directly and indirectly, via perceived social support, predicts loneliness. Reconciling one's own interests with others' interests may be particularly important to maintaining relationships and thus avoiding loneliness in Japan (Lebra 1984).

Nonetheless, we are unable to replicate these key findings with the alternative measure of loneliness as negative affect or emotion. Self-construal may be more important to explain the "social" than "emotional" dimension of loneliness, as defined by authors of earlier studies.

Although not the focus of our study, the effects of other variables, such as marital status and age, are interesting in their own right. In Japanese marriages, more emphasis is put on pragmatic purposes (e.g., economic and reproductive) than on fulfilling psychological needs (Bell and Bell 2000; Kamo 1993). However, in our study it is when loneliness is measured as negative affect that marriage significantly reduces loneliness. Conversely, we find that older age is associated with more loneliness that is measured on the UCLA Loneliness Scale, but age has little to do with loneliness measured as negative affect.

Our study has some limitations. The most serious one is our measures of interdependence and independence. Measurement of self-construal has been hotly debated (Cross et al. 2011; Levine et al. 2003a, b; Kitayama et al. 2009). With the available 22 items from the MIDJA, we are only able to create measures of "collective interdependence" and "agency independence." Difficulty of capturing the generality of interdependent or independent self-definition may be due to the very nature of the construct itself. As Kitayama and his associates (2009) show, measures of self-construals tend to cohere more easily as explicit self-beliefs (which we use) than as implicit psychological tendencies. These scholars argue that the lack of correlations among implicit psychological tendencies is an inevitable result of culture-mind interaction where individuals incorporate "their culture's mandate of independence or interdependence in highly idiosyncratic fashion" (p.251).

Secondly, due to its cross-sectional nature, it is unable to illuminate causation among our key variables: interdependence, independence, and subjective qualities of social relationships and loneliness. Are the self-construal constructs the shapers of subjective perceptions of relations with others? Or rather, do those perceptions influence individuals' self-definitions? Similar questions might be asked about self-construal and loneliness. While loneliness tends to be relatively stable for most people, Newall et al. (2014) find that over one-quarter of older adults in their study became more or less lonely over a five-year period. Longitudinal data, ideally covering a long time (i.e., decades), on individuals' self-definitions, perceived qualities of social relationships, loneliness, and other relevant variables are required to answer these questions. Furthermore, perceptions of relationships may be influenced by others' self-construal as well as one's own self-construal. For example, a Canadian study found that college students who perceived their friends to have high relational-interdependent self-construal reported better relationship quality (Morry et al. 2013). Finally, our study uses data from a sample of Tokyoites. Replications of our findings are thus necessary before they are generalized to Japanese as a whole. Certainly, replications can go beyond Japan. It would be interesting for future research to examine associations between self-construal and perceptions of social relationships with data from other societies that are traditionally collectivist (e.g., China and Brazil) as well as those that are individualist (e.g., US and Australia).

Our findings have broader significance given the relationship between social relations and loneliness on the one hand and physical and mental health on the other hand (Cohen 2004; Hawkley and Cacioppo 2007). Although evidence comes largely from European studies, unhappiness in the form of loneliness appears to be more severe in collectivist than individualist social contexts (Dykstra 2009; Lykes and Kemmelmeier 2014). *Hikikomori*, a form of severe social withdrawal (e.g., from education, employment, and friendships) (Saito 1998; Teo 2010) has received much attention over recent decades within and increasingly outside of Japan. Some experts consider *hikikomori* in part culturally bound (Teo and Gaw 2010). Others also liken it to the "modern-type depression" often observed in collectivist societies with increasing exposure to the internet, and argue that these social contexts may undermine traditional social norms and discourage social interactions outside of the virtual world especially for young individuals (Kato et al. 2010, p.1070). Future research may examine in detail how individual members of collectivist societies develop their self-conception over the life course, which in turn influences their subjective social wellbeing.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Appendix 1

Table 5 Comparison of "Leavers" vs. "Stayers"

		Leavers			Stayers		
Variable	Range	Mean	SE	N	Mean	SE	N
Social support	1,4	2.88	.017	362	2.93[a]	.012	653
Social support (gross)	1,4	2.48	.030	363	2.53	.021	655
Social strain	1,4	1.72	.024	363	1.67	.017	653
Lonely	1,5	1.65	.048	365	1.57	.034	654
Interdependence	1,7	5.22	.052	364	5.30	.038	655
Independence	1,7	5.55	.057	365	5.59	.038	654
Married	0,1	.64	.025	369	.72[b]	.017	656
Any children	0,1	.67	.024	365	.76[b]	.016	654
Female	0,1	.47	.021	370	.53	.012	657
Age	30,79	53.38	.62	370	54.92	.34	657
Extraversion	1,4	2.41	.037	369	2.43	.025	655

Source: 2008 MIDJA (ICPSR 2011)

[a] $p < .05$ [b] $p < .01$

Appendix 2

Table 6 Factor analysis for self-construal indicators

Variable	Factor loading	Uniqueness
Interdependence:		
a) "I have respect for the authority figures with whom I interact."	.31	.81
b) "It is important for me to maintain harmony or smooth relationships within my group."	.55	.60
c) "I respect people who are modest about themselves."	.47	.71
d) "I will sacrifice my self-interest for the benefit of the group I am in."	.56	.63
e) "I should take into consideration others' advice when making work or family plans."	.45	.76
f)" It is important to me to respect decisions made by the group."	.66	.45
g) "I will stay in a group if they need me, even when I'm not happy with the group."	.53	.62
h) "If people in my family fail, I feel responsible."	.47	.72
i) "Even when I strongly disagree with group members, I avoid an argument."	.14	.78
j) "My happiness depends on the happiness of those around me."	.36	.79
k) "I often have the feeling that my relationships with others are more important than my own accomplishments."	.48	.68
l) "It is important to listen to others' opinions."	.55	.65
Independence:		
a) "I'd rather say "NO" directly, than risk being misunderstood."	.37	.81
b) "Speaking up is not a problem for me."	.58	.58
c) "Having a lively imagination is important to me."	.67	.47
d) "I am comfortable with being singled out for praise or rewards."	.27	.84
e) "I am the same person at home that I am at work or in other social settings."	.34	.66
f) "I prefer to be direct and forthright when dealing with people I've just met."	.36	.73
g) "It is important to have my own ideas."	.59	.50
h) "I act in the same way no matter who I am with."	.40	.61
i) "I enjoy being unique and different from others in many respects."	.50	.68
j) "Being able to take care of myself is a primary concern for me."	.43	.64

References

Bell, L. G., & Bell, D. C. (2000). Japanese and U.S. marriage experiences: Traditional and non-traditional perceptions of family. *Journal of Comparative Family Studies, 31*, 309–319.

Berg, J. H., & Peplau, L. A. (1982). Loneliness: The relationship of self-disclosure and androgyny. *Personality and Social Psychology Bulletin, 8*, 624–630.

Borys, S., & Perlman, D. (1985). Gender differences in loneliness. *Personality and Social Psychology Bulletin, 11*, 63–74.

Burleson, B. R., & Mortenson, S. R. (2003). Explaining cultural differences in evaluations of emotional support behaviors: Exploring the mediating influences of value systems and interaction goals. *Communication Research, 30*, 113–146.

Chen, X., He, Y., De Oliveira, A. M., Coco, A. L., Zappulla, C., Kaspar, V., Schneider, B., Valdivia, I. A., Tse, H. C., & Desouza, A. (2004). Loneliness and social adaptation in Brazilian, Canadian, Chinese and Italian children: A multi-national comparative study. *Journal of Child Psychology and Psychiatry, 45*, 1373–1384.

Cheng, H., & Furnham, A. (2002). Personality, peer relations, and self-confidence as predictors of happiness and loneliness. *Journal of Adolescence, 25*, 327–339.

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*, 676–684.

Cross, S. E., Bacon, P. L., & Morris, M. L. (2000). The relational-interdependent self-construal and relationships. *Journal of Personality and Social Psychology, 78*, 791–808.

Cross, S. E., Hardin, E. E., & Gercek-Swing, B. (2011). The what, how, why, and where of self-construal. *Personality and Social Psychology Review, 15*, 142–179.

Dykstra, P. A. (2009). Older adult loneliness: Myths and realities. *European Journal of Ageing, 6*, 91–100.

Goswick, R. A., & Jones, W. H. (1981). Loneliness, self-concept, and adjustment. *Journal of Psychology, 107*, 237–240.

Green, V. A., & Wildermuth, N. L. (1993). Self-focus, other-focus, and interpersonal needs as correlates of loneliness. *Psychological Reports, 73*, 843–850.

Green, L. R., Richardson, D. S., Lago, T., & Schatten-Jones, E. C. (2001). Network correlates of social and emotional loneliness in young and older adults. *Personality and Social Psychology Bulletin, 27*, 281–288.

Hall, E. (1976). Beyond culture. New York: Doubleday.

Hawkley, L., & Cacioppo, J. T. (2007). Aging and loneliness: Downhill quickly? *Current Directions in Psychological Science, 16*, 187–191.

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging, 26*, 655–672.

ICPSR. (2010). National Survey of Midlife Development in the United States (MIDUS), 1995–1996 (#2760). Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

ICPSR. (2011). Survey of Midlife Development in Japan (MIDJA), April–September 2008 (#30822). Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

ICPSR. (2016). Survey of Midlife Development in Japan (MIDJA 2), May–October 2012 (#36427). Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Jones, W. H. (1981). Loneliness and social contact. *Journal of Social Psychology, 113*, 295–296.

Kağitçibasi, Ç. (1996). The autonomous-relational self: A new synthesis. *European Psychologist, 1*, 180–186.

Kamitani, Y. (1993). The structure of *jiritsu* (socially sensitive independence) in young Japanese. *Women Psychological Reports, 72*, 855–866.

Kamo, Y. (1993). Determinants of marital satisfaction: A comparison of the United States and Japan. *Journal of Social and Personal Relationships, 10*, 551–568.

Kanagawa, C., Cross, S. E., & Markus, H. R. (2001). "Who am I?" The cultural psychology of the conceptual self. *Personality and Social Psychology Bulletin, 27*, 90–103.

Karan, P. (2005). *Japan in the 21st century: Environment, economy, and society*. Lexington: The University of Kentucky Press.

Kashima, Y., Yamaguchi, S., Kim, U., Choi, S.-C., Gelfand, M. J., & Yuki, M. (1995). Culture, gender, and self: A perspective from individualism-collectivism research. *Journal of Personality and Social Psychology, 69*, 925–937.

Kato, T. A., Shinfuku, N., Sartorius, N., & Kanba, S. (2010). Are Japan's *hikikomori* and depression in young people spreading abroad? *Lancet, 378*, 1070.

Kim, M. S., Aune, K. S., Hunter, J. E., Kim, H.-J., & Kim, J.-S. (2001). The effect of culture and self-construals on predispositions toward verbal communication. *Human Communication Research, 27*, 382–408.

Kim, M. S., & Raja, N. S. (2003). When validity testing lacks validity: Comments on Levine et al. *Human Communication Research, 29*, 275–290.

Kim, Y., Kasser, T., & Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea and the United States. *Journal of Social Psychology, 143*, 277–290.

Kitayama, S., & Markus, H. R. (2000). The pursuit of happiness and the realization of sympathy: Cultural patterns of self, social relations, and well-being. In E. Diener & E. M. Suh (Eds.), *Cultural and subjective well-being* (pp. 113–161). Cambridge: MIT Press.

Kitayama, S., Park, H., Sevincer, A. T., Karasawa, M., & Uskul, A. K. (2009). A cultural task analysis of implicit independence: Comparing North America, Western Europe, and East Asia. *Journal of Personality and Social Psychology, 97*, 236–255.

Lebra, T. S. (1984). Nonconfrontational strategies for management of interpersonal conflicts. In E. S. Krauss, T. P. Rohlen, & P. G. Steinhoff (Eds.), *Conflict in Japan* (pp. 41–60). Honolulu: University of Hawaii Press.

Levine, T. R., Bresnahan, M. J., Park, H. S., Lapinski, M. K., Wittenbaum, G. M., Shearman, S. M., Lee, S. Y., Chung, D., & Ohashi, R. (2003a). Self-construal scales lack validity. *Human Communication Research, 29*, 210–252.

Levine, T. R., Bresnahan, M. J., Park, H. S., Lapinski, M. K., Lee, T. S., & Lee, D. W. (2003b). The (in)validity of self-construal scales revisited. *Human Communication Research, 29*, 291–308.

Li, C. (2006). The Confucian ideal of harmony. *Philosophy East and West, 56*, 583–603.

Li, C. (2008). The ideal of harmony in ancient Chinese and Greek philosophy. *Dao, 7*, 81–98.

Loucks, S. (1980). Loneliness, affect, and self-concept: Construct validity of the Bradley loneliness scale. *Journal of Personality Assessment, 44*, 142–147.

Lu, L., & Gilmour, R. (2004). Culture and conceptions of happiness: Individual oriented and social oriented SWB. *Journal of Happiness Studies, 5*, 269–291.

Lykes, V. A., & Kemmelmeier, M. (2014). What predicts loneliness? Cultural difference between individualistic and collectivistic societies in Europe. *Journal of Cross-Cultural Psychology, 45*, 468–490.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224–253.

Matsunaga, M., & Imahori, T. T. (2009). Profiling family communication standards: A U.S.-Japan comparison. *Communication Research, 36*, 3–31.

Morry, M. M., Kito, M., Mann, S., & Hill, L. (2013). Relational-interdependent self-construal: Perceptions of friends and friendship quality. *Journal of Social and Personal Relationships, 30*, 44–63.

Mortenson, S. T., Burleson, B. R., Feng, B., & Liu, M. (2009). Cultural similarities and differences in seeking social support as a means of coping: A comparison of European Americans and Chinese and an evaluation of the mediating effects of self-construal. *Journal of International and Intercultural Communication, 2*, 208–239.

Newall, N. E. G., Chipperfield, J. G., & Bailis, D. S. (2014). Predicting stability and change in loneliness in later life. *Journal of Social and Personal Relationships, 31*, 335–351.

Ogihara, Y., & Uchida, Y. (2014). Does individualism bring happiness? Negative effects of individualism on interpersonal relationships and happiness. *Frontiers in Psychology, 5*, 1–8.

Okazaki. (1997). Sources of ethnic differences between Asian and white American college students on measures of depression and social anxiety. *Journal of Abnormal Psychology, 106*, 52–60.

Oyserman, D., Sorensen, N., Reber, R., & Chen, S. X. (2009). Connecting and separating mind-sets: Culture as situated cognition. *Journal of Personality and Social Psychology, 97*, 217–235.

Peplau, L. A., & Perlman, D. (Eds.). (1982). *Loneliness: A sourcebook of current theory, research, and therapy.* New York: Wiley-Interscience.

Reid, A. (2004). Gender and sources of subjective well-being. *Sex Roles, 51*, 617–629.

Russell, D. W. (1996). UCLA loneliness scale (version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment, 66*, 20–40.

Russell, D., Peplau, L., & Cutrona, C. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology, 39*, 472–480.

Russell, D., Cutrona, C., Rose, J., & Yurko, K. (1984). Social and emotional loneliness: An examination of Weiss's typology of loneliness. *Journal of Personality and Social Psychology, 46*, 1313–1321.

Saito, T. (1998). *Shakaiteki hikikomori: owaranai shishunki (Social withdrawal: An endless adolescence)*. Tokyo: PHP Shinsho.

Sinclair, L., & Fehr, B. (2005). Voice versus loyalty: Self-construals and responses to dissatisfaction in romantic relationships. *Journal of Experimental Social Psychology, 41*, 298–304.

Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychological Bulletin, 20*, 580–591.

Takata, T. (2004). *Developmental social psychology of "Japanese self."*. Kyoto: Nakanishiya Shuppan.

Takata, T. (2007). Independent and interdependent self-schema in Japanese adolescents and elders. *Shinrigaku Kenkyu, 78*, 495–503.

Teo, A. R. (2010). A new form of social withdrawal in Japan: A review of hikikomori. *International Journal of Social Psychiatry, 56*, 178–185.

Teo, A. R., & Gaw, A. C. (2010). *Hikikomori*, a Japanese culture-bound syndrome of social withdrawal? A proposal for DSM-V. *The Journal of Nervous and Mental Disease, 198*, 444–449.

Uchida, Y., Norasakkunkit, V., & Kitayama, S. (2004). Cultural constructions of happiness: Theory and empirical evidence. *Journal of Happiness Studies, 5*, 223–239.

Uchida, Y., Kitayama, S., Mesquita, B., Reyes, J. A. S., & Morling, B. (2008). Is perceived emotional support beneficial? Well-being and health in independent and interdependent cultures. *Personality and Social Psychology Bulletin, 34*, 741–754.

Vandervoort, D. (2000). Social isolation and gender. *Current Psychology, 19*, 229–236.

Vignoles, V. L., Owe, E., Becker, M., & Smith, P. B. (2016). Beyond the "east-west" dichotomy: Global variation in cultural models of selfhood. *Journal of Experimental Psychology: General, 145*, 966–1000.

Wei, X., & Li, Q. (2013). The Confucian value of harmony and its influence on Chinese social interaction. *Cross-Cultural Communication, 9*, 60–66.

Weiss, R. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge: MIT Press.

Yamawaki, N. (2012). Within-culture variations of collectivism in Japan. *Journal of Cross-Cultural Psychology, 43*, 1191–1204.