CULTURAL CONTEXT AND PSYCHOLOGICAL NEEDS IN CANADA AND BRAZIL
Testing a Self-Determination Approach to the Internalization of Cultural Practices, Identity, and Well-Being

VALERY I. CHIRKOV
University of Saskatchewan

RICHARD M. RYAN
University of Rochester

CHELSEA WILLNESS
University of Calgary

Brazilian and Canadian students reported on the importance and frequency of cultural practices and values reflecting Triandis's cultural model of individualistic-collectivistic and horizontal-vertical orientations. They also rated their relative autonomy for these practices and the degree to which parents and teachers supported self-determination theory's psychological needs for autonomy, competence, and relatedness. It was predicted that in both samples, despite the mean differences, greater relative autonomy and need support would be associated with greater well-being and cultural identity. It was also expected that vertical cultural orientations would be less well internalized in both Brazilian and Canadian groups. Means and covariance structure analyses verified measurement comparability. Results generally supported the hypotheses. Discussion focuses on the importance of internalization across cultural forms, the differentiation of autonomy from individualism and independence, and the relations between horizontal cultural orientations and psychological needs support.

Keywords: self-determination theory; cultural dimensions; well-being; internalization of culture

One of the major assumptions that underlies cross-cultural social psychology is that culture shapes human behavior (Brislin, 2000). In fact, in many well-developed models of social behavior, cultural factors are understood as the principle antecedents of individual behavior, shaping values, self, and motivation of individuals (Lonner & Adamopoulos, 1997; Markus & Kitayama, 1991). At the same time, there has been little empirical study of the degree to which persons play any role in modifying, rejecting, or altering ambient cultural scripts, or the variation between people in actually identifying with transmitted cultural norms (Chirkov, 2001; Nussbaum, 2000). There have also been almost no investigations concerning whether some cultural forms are more easily assimilated than others or if some forms, when adopted, are more problematic for individual or collective well-being than others.

In this article, we investigate several of these issues using the framework of self-determination theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2001). SDT suggests that within

every culture, ambient norms and practices are assimilated or internalized by members of this culture to varying degrees. The less well-internalized a cultural practice, the more its enactment is dependent on external regulation and introjected pressures, whereas the more fully internalized or integrated a practice or norm is, the more one identifies with its value and thus experiences its enactment as volitional or autonomous. Thus, the internalization of cultural practices varies in its degree of relative autonomy (Ryan & Connell, 1989) from being based in external controls to integrated, volitional regulation. Variations in this degree of autonomy have, in turn, been associated with adherence to specific behaviors and to well-being (Vallerand, 1997; Willams, Gagne, Ryan, & Deci, 2002). In this study, we look for further empirical support of the SDT's proposition regarding the positive relation between the internalization of cultural practices and well-being. In doing so, we plan to replicate the results obtained by Chirkov, Ryan, Kim, and Kaplan (2003), who showed that behaviors reflecting various cultural orientations are internalized to different degrees by members of diverse cultures, and that the extent of internalization (i.e., the degree of relative autonomy) predicts well-being.

SDT also claims that autonomy is only one of three basic psychological needs that subserve growth and well-being across cultures. SDT defines autonomy, competence, and relatedness[1] as basic needs, rather than as desires or motives, insofar as they must be fulfilled for well-being, psychological growth, and integrity to obtain (Deci & Ryan, 2000; Ryan, 1995). Although personal goals and preferences differ widely across cultures, needs do not have to be valued within a particular culture to have functional import (Doyal & Gough, 1991). In cross-cultural research, SDT is thus specifically focused on the diverse ways in which cultural forms can support basic needs and on the universal functional effects of need fulfillment versus thwarting (Deci & Ryan, 2000; Ryan & Deci, 2003). We extend this model by examining the relations of basic need support to well-being and perceived cultural fit among Brazilian and Canadian university students.

Finally, in this study we explore the degree to which practices representing different cultural orientations are readily internalized. In addition to discovering the positive relations between the level of internalization of cultural practices and persons' well-being, Chirkov et al. (2003) reported that vertical cultural practices tended to be less well internalized across cultures relative to horizontal ones. They speculated that this phenomenon may generalize to other cultures, insofar as vertical orientations may inherently provide less support for basic psychological needs. Accordingly, we revisit this issue, examining the relations of different cultural orientations to internalization, psychological needs support, well-being, and to national identity.

To test these hypotheses, we specifically sought out nations that had not been examined by Chirkov et al. in their previous work and nations that were differentiated along the north-south axis rather than the east-west axis that has been so much in focus in recent cultural studies of motivation. However, before turning to the specific methods and samples, we provide some further theoretical backdrop regarding each of these questions.

INTERNALIZATION, AUTONOMY, AND WELL-BEING ACROSS CULTURES

In cross-cultural theories, the concept of *internalization* is not new. For example, LeVine (1973) distinguished three processes through which cultural norms are adopted: *willing conformity*, when human needs and social norms organically fit together; *coerced conformity*,

wherein personality structure and normative pressures make incompatible behavioral demands; and *normative pluralism*, in which a diversity of norms exists in society and there is room for persons to find norms and values that best match their personality demands. Spiro (1961) also proposed three types of motivations determining culturally prescribed social behaviors. Spiro's *extrinsic cultural motivation* is based on control through rewards and punishments. *Intrinsic cultural motivation* represents the motivation that develops when culturally prescribed goals and norms fit with or do not frustrate a person's drives and needs, and as a result, "duty transforms into desire." Finally, *internalized cultural motivation* takes place when "the performance of roles is motivated by the expectation of satisfying super-ego needs" (Spiro, 1961, p. 135). The cultural anthropologists who investigate cultural determination of social behavior emphasized the internalization of various culturally prescribed norms and behaviors as a crucial point in understanding the motivation of social behavior in different cultural contexts (D'Andrade, 1984, 1992; Strauss, 1992). As Strauss (1992) stated, "It is not enough to know *what* information people are exposed to; we also have to study *how* they internalize that information" (p. 11). Such theories suggest that cultural practices can be engaged in by a person for different reasons, some more based in external regulation and others more internalized or self-regulated, and that the process of internalization is responsible for the explanation of why some cultural prescriptions, but not others, acquire motivational force.

Like these theories, SDT assumes that all cultural practices are learned through the various processes of socialization. But the learned norms and practices acquire motivational power only if people internalize the meanings, values, sensibilities, and regulations that govern these norms and practices. SDT distinguishes a continuum of behavior regulations ranging from *external regulation* (reward- and punishment-based adherence) and *introjection* (regulation based in approval or self-esteem-based contingencies) to *identification* (regulation based in personally endorsed values or beliefs) and *integration* (regulation of identifications embedded in and harmonious with an organized system of values). Each of these types of regulation represents levels of internalization that vary in their relative autonomy, with external being the least autonomous and integration the most (Ryan & Connell, 1989; Vallerand, 1997). SDT argues that experiencing one's behaviors as more autonomous is universally more conducive to well-being and personal growth than behaving out of more heteronomous forms of regulation (Ryan & Deci, 2001).

SDT views concerning the universal significance of autonomously regulated behaviors have, however, sparked considerable debate. For example, Oishi (2000) argued that greater autonomy, which he equated with individualism, only yields benefits to persons inside a few highly individualistic Western nations where autonomy is valued. Similarly, Miller (1999) argued that lack of autonomy, as SDT conceives, is not likely to be cross-culturally detrimental, especially within cultures based in authority or tradition. However, both Ryan (1993) and Kagitcibasi (1996) have suggested that such interpretations depend upon an interpretation of autonomy as individualism or independence. SDT, however, explicitly differentiates independence from autonomy: The former concerns being separate from or not relying on others, whereas autonomy concerns being volitional or endorsing one's goals and actions (Ryan, Deci, & Grolnick, 1995; Ryan & Lynch, 1989). Similar to the notion of individualism, which is seen as the system of cultural representations and practices where the priority is given to the individuals' needs, goals, and preferences rather than to the collective's needs and goals, SDT unequivocally separates it from the concept of autonomy. Thus, in SDT's framework one can be autonomously interdependent or collectivistic or autonomously individualistic, and the issue of autonomy would concern how well the values and meanings behind each

practice were assimilated or internalized. Accordingly, in a recent comparison of Russian, South Korean, Turkish, and U.S. students, Chirkov et al. (2003) found support for SDT's prediction of a positive relation between one's relative autonomy for cultural practices and well-being that held up across all four samples. In the study of self-concordance, where personal goals are seen as the expression of authentic values and interests, Sheldon et al. (2004) investigated the level of autonomous goal pursuit in four countries (People's Republic of China, South Korea, Taiwan, and the United States) and discovered that self-concordance predicted subjective well-being within all of these countries.

In this study, we investigate Brazilian and Canadian students, predicting in both countries that when persons experience autonomy in enacting ambient cultural practices, their well-being becomes better. In assessing the perception of cultural practices and norms, we follow the procedure used by Chirkov et al. (2003) in having participants report how important and how frequent specific practices reflecting various cultural orientations are in their own social context. Chirkov et al. showed that these reports of ambient culture were largely consistent with the classifications used by Hofstede (1997) (e.g., U.S. students saw the U.S. culture as relatively individualistic, Koreans and Turks viewed their respective national cultures as relatively collectivist). This approach also yields the advantage of assuming that participants can experience a heterogeneous cultural context even within the same country, and that individuals' practices can be multiorientational (i.e., one can engage in both horizontal and vertical practices or individualistic and collectivist ones). Most important, it does not assume that participants have necessarily internalized or identified with the practices they perceive as pervasive or dominant in their cultural context. To measure the internalization of cultural practices, we have participants rate *why* they would engage in varied cultural practices or whether such practices would be regulated by identifications, introjects, and/or external controls. This again reflects our assumption that even within a given society, people vary in the degree to which they internalize and integrate transmitted practices.

THE EFFECTS OF PERCEIVED PSYCHOLOGICAL NEED SUPPORTS ON WELL-BEING AND CULTURE FIT

Well-Being. We also test a related proposition that the more both Brazilian and Canadian students perceive socializing others (specifically, parents and teachers) as supporting their basic psychological needs, the greater will be their overall well-being. This hypothesis is derived from SDT's prediction that the impact of basic need support on well-being is universally positive in its effects because it fits with intrinsic growth tendencies in human nature (Grolnick, 2003; Ryan & Deci, 2001). Although there has been little prior research on this hypothesis, at least two studies bear on this. Chirkov and Ryan (2001) reported that despite mean differences, there were similar positive effects of perceived parent and teacher autonomy support on well-being and motivation in both U. S. and Russian high school students. Deci et al. (2001) showed that support for basic needs was predictive of workers' well-being in both collectivist, state-run industries in Bulgaria and in market-oriented U.S. companies.

Culture fit. SDT also suggests that through the process of internalization, people come to feel more integrated (or less alienated) within their culture (Ryan & Deci, 2003). In the present study, we suggest that both the internalization of the norms within one's perceived cultural context and one's experience of identifying with and "fitting" within one's culture will be associated with a perception that socializers support one's sense of relatedness, competence, and autonomy. That is, insofar as a person sees opportunities to satisfy basic psycho-

logical needs, they will more readily internalize ambient practices and are more likely to feel more at home or identified with that culture. Although there have been no direct tests of this previously, Asakawa (1998) and Asakawa and Csikzentmihalyi (2000) showed that internalization of academic values in Asian American teens was associated with the parental relatedness and autonomy support experienced by them. Stewart et al. (2000) reported evidence that in Pakistan, a more traditional country where obedience and conformity is valued and important, parental autonomy support was associated with positive outcomes for both boys and girls and conduces to greater acceptance of cultural norms.

In sum, in this study, we extend previous research by assessing how perceived need support relates not only to participants' internalization of ambient cultural practices but also to a sense of cultural fit.

VERTICAL CULTURAL PRACTICES: HOW READILY ARE THEY INTERNALIZED?

Various models exist regarding how cultures influence human behavior. Many reflect what Tooby and Cosmides (1992) labeled the standard social science model (SSSM), in which humans are viewed as being relatively blank slates upon which cultural contexts write themselves. The assumed high degree of plasticity of humans suggests they can "take in" or acquire most any set of habits, behaviors, or values. The SSSM fits well with another popular view, namely, cultural relativism. For cultural relativists, human nature is largely a social construction. This includes the idea that needs, values, and goals differ across cultures, and that it is adherence or success at one's culturally specific values that predicts optimal functioning and well-being (Diener & Suh, 2000). This paradigm has been exemplified in the work of several social psychologists, whose attention to cultural variation has uncovered considerable cultural specificity to many psychological processes previously presumed to be universal (see (Markus & Kitayama, 1991; Markus, Kitayama, & Heiman, 1996).

Even assuming, however, that culture shapes or sculpts human nature (Cross & Gore, 2003), the question remains whether people can assimilate any cultural content or, alternatively, whether some types of cultural practices are more palatable or fitting with human nature than others. SDT maintains that because of the capacity of many cultural forms to facilitate the satisfaction of basic psychological needs, quite varied cultural forms can be readily internalized. Thus, one can readily internalize collectivistic or individualistic practices, norms, and values, as each affords opportunities to fulfill important psychological needs. However, some cultural forms may, because of their relatively poorer fit with basic needs, be less easily internalized than others (Ryan & Deci, 2003). In their four-country study, Chirkov et al. (2003) found that particularly vertical cultural practices, which focus on deference to authority, unquestioned following of tradition, and competition (Triandis, 1996), were, on average, less well internalized compared to horizontal practices, which reflect equal rights and respect for all individuals. Chirkov et al. (2003) interpreted that finding as suggesting that whereas horizontal orientations represent cultural forms that can readily support basic psychological needs, vertical relations can frequently pose conflict for need fulfillment and thus tend to be anchored by more controlling forms of internalization such as introjection or external regulation. More recently, Downie & Koestner (2003) studied a diverse group of tricultural individuals in Quebec, finding that those who came from a vertical cultural backdrop showed decreased autonomy, decreased perceived cultural integration, and lower well-being compared with those from a more horizontal backdrop.

In this study, we further examine whether vertical cultural practices may on average be less readily internalized than horizontal practices by Brazilian and Canadian participants. We also examine the related hypothesis that when students perceive their ambient cultural context as horizontal, it is highly probable that they will experience socializers (i.e., parents and teachers) as being more supportive of their basic needs. We do not expect to see these associations with the vertical relations. We expect that the support of this hypothesis will help us to understand why horizontal relations may be more beneficial for human functioning in comparison to the vertical ones.

WHY BRAZIL AND CANADA?

We investigate these issues using samples from Canada and Brazil, which are distinguished geographically along the north-south axis. Our intent is to broaden the scope of a growing body of cross-cultural research based on SDT that has to date been focused largely on East-West comparisons and nations above the equator (e.g., Chirkov & Ryan, 2001; Deci et al., 2001; Ryan et al., 1999; Sheldon, Elliott, Kim, & Kasser, 2001).

Based on historical and ethnographic analyses (Harrison, 1992), Brazil cannot be unambiguously classified as individualist or collectivist, horizontal or vertical. On one hand, it is a bearer of the Hispanic American mainstream culture that can be characterized as authoritarian and paternalistic with a relatively strong emphasis on family. On the other hand, because of the strong influence of immigrants, Brazil in the last century has shifted strongly toward more egalitarian, democratic, and market-oriented values that have brought about profound changes in both economics and cultural orientations. According to Hofstede (1997), Brazil is somewhat more vertical than horizontal, with its rating on power distance (14th out of 53 counties) close to France, Singapore, and Yugoslavia. With regard to individualism-collectivism, it shares 26th place among 53 countries, which indicates its middle position on this dimension.

Canada, however, is somewhat differently positioned. Canadians appear to be more individualistic than Brazilians, because according to Hofstede's ratings, Canada occupies the 4th and 5th ranks on individualism among 53 countries. They also have a cultural style that is more horizontal compared to Brazilians: On power distance, Canada is 39th out of 53 countries. It is important to note that these characteristics of national cultures are not universally applicable across various parts of each country and may differ by territories and regions. Herein we examine students within each nation who, although comparable in age, education, and media exposure, are expected to differ in beliefs and values as a function of their distinct cultural backdrops.

SUMMARY OF HYPOTHESES

We attempt to extend research on the role of relative autonomy and need support in promoting psychological well-being across cultures. We first test the measurement comparability (Little, 1997) of our central psychological constructs across Canadian and Brazilian participants, including measures of perceived cultural context, motivation, psychological needs, and well-being. We then test a number of specific hypotheses that include

(a) Across samples, there will be greater relative autonomy for horizontal practices than vertical ones.
(b) Despite differences in perceived cultural practices between samples, the relative autonomy for engaging cultural practices will positively predict well-being.
(c) Despite mean differences, perceived support for basic psychological needs provided by parents and teachers will be positively associated with well-being.
(d) To the extent one's cultural context is perceived as horizontal, the more one will see socializers as supportive of basic needs, an association that will not hold for vertical cultural orientations.
(e) The more parents and teachers are perceived as supporting basic psychological needs, the more participants will feel fit with their culture.

METHOD

PARTICIPANTS

Participants were 142 students (43 men and 99 women) from the University of Saskatchewan, Saskatoon, Canada, and 127 students (111 men and 30 women) from the University of Belo Horiozonte, Brazil. Ages of the Canadian students ranged from 18 to 43 with a mean of 19.8 years. For the Brazilian students, ages were from 19 to 34 with a mean of 23.4 years. The age difference between the groups was significant, $t(230) = 7.05$, $p < .001$, $d = 0.92$. Other demographic variables including participants' gender, family income, parents' level of education, and the size of the city where the participants were born are presented in Table 1.

The participants from the Canadian sample had more educated parents: for father's education, $t(266) = 5.60$, $p < .001$, $d = 0.69$, and for mother's education, $t(266) = 10.37$, $p < .001$, $d = 1.27$. With regard to other demographic variables, the samples did not differ. All participation was voluntary, with Canadian students earning course credits for participation.

MEASURES

Perceived cultural context (PCC; Chirkov et al., 2003) was assessed with four sets of 6 items, with each set representing one of four cultural orientations: horizontal individualism, horizontal collectivism, vertical individualism and vertical collectivism. The items were derived from the scales used by Singelis, Triandis, Bhawuk, and Gelfand (1995), Triandis (1996), and Triandis and Gelfand (1998) to measure these cultural syndromes on the individual level. Participants rated each of the 24 items representing different behaviors and attitudes with regard to their perceived importance and frequency of occurrence for typical Canadians or Brazilians, respectively, on 5-point Likert-type scales. As in the previous work (Chirkov et al., 2003), scores for importance and frequency ratings for each type of cultural practice were highly correlated and thus combined, resulting in the four PCC dimensions: Horizontal Collectivism (HC; Cronbach's alphas were .65 for Brazilians and .60 for Canadians), Horizontal Individualism (HI; Cronbach's alphas were .72 and .73 correspondently), Vertical Collectivism (VC; Cronbach's alphas were .69 and .75 correspondently), and Vertical Individualism (VI; Cronbach's alphas were .76 and .85 correspondently). Except for HC, the reliabilities for the scales were acceptable. Because of the low reliability of the HC scales, the results based on this scale were treated with caution.

Internalization (relative autonomy) of cultural practices was assessed by asking participants to rate the items from the PCC Scale again, this time for the extent to which each behavior was based in each of four types of motivation reflecting variations in internalization

TABLE 1
Socioeconomic and Demographic Characteristics of the Brazilian (*n* = 129)
and Canadian (*n* = 142) Samples

	Brazil		*Canada*	
Age				
Mean	23.4		19.8	
Range	17-40		18-43	
	Frequency	*%*	*Frequency*	*%*
Gender				
Females	27	21.3	99	69.7
Males	100	78.7	43	30.3
Family income				
Low-low (1)	34	26.4	27	19.0
Low (2)	54	41.9	56	39.4
Middle (3)	23	17.8	37	26.1
High (4)	9	7	20	14.1
High-high (5)	7	5.4	1	0.7
Father's education				
Some high school	84	65.1	35	24.6
High school	20	15.5	37	26.1
Some college	3	2.3	29	20.4
College graduate	12	9.3	28	19.7
Beyond college	8	6.2	12	8.5
Mother's education				
Some high school	90	69.8	13	9.2
High school	18	14.0	40	28.2
Some college	3	2.3	36	25.4
College graduate	14	10.9	44	31.0
Beyond college	2	1.6	8	5.6
Place of birth				
Urban	51	39.5	63	44.4
Suburban	64	49.6	68	47.9
Rural	10	7.8	11	7.7

(Ryan & Connell, 1989; Vallerand, 1997). Thus, for each item participants indicated the extent to which they would engage in the target behavior because of external (rewards or punishment contingencies), introjected (self-or other approval), identified (personal value), or integrated regulations (a value that is reflectively accepted and seen as fitting with one's other values). These statements were rated on a 5-point Likert-type scale (1 = *strongly disagree* and 5 = *strongly agree*). Cronbach's alphas for these subscales were within the acceptable range (higher than .70) in both samples, except for the Identified Regulation subscales in the Canadian samples where these alphas were .63 and higher. As in prior researches, an index of internalization (or relative autonomy index) of the four types of cultural practices was scored using the following formula: 2integrated regulation + identified regulation – introjected regulation – 2external regulation. The higher values indicated the greater internalization of a given practice.

To assess the parents' and teachers' basic psychological needs support (BPNS), two similar scales were used to measure perceived BPNS from parents and teachers. Support for autonomy, competence, and relatedness was measured using items drawn from the Percep-

tions of Parents Scale (Robbin, 1994) and a matched version for teachers. Each scale included 20 items, 7 of which measured perceived autonomy support (e.g., "My parents/teachers provide me with choices and options of how to run my life"), 7 measured perceived competence support ("My parents/teachers make me feel competent in my work"), and 6 measured perceived relatedness support ("My parents/teachers care about me"). As in previous research, three subscales were highly intercorrelated. Reliability of the combined scale yielded Cronbach's alphas for Brazilians of .90 (parents' BPNS) and .83 (teachers' BPNS). In the Canadian sample, these alphas were .87 and .91, respectively.

The assessment of psychological well-being reflected its conceptualization as having two components: hedonistic and eudemonic (Ryan & Deci, 2003), each measured by widely used scales that proved their validity in our previous research (Chirkov et al., 2003; Chirkov & Ryan, 2001). Included were the 5-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), the 15-item Short Index of Self-Actualization (Jones & Crandal, 1986), the 10-item Self-Esteem Scale (Rosenberg, 1965), and 6 items from the CES-Depression Inventory (Radloff, 1977). Each item was rated on a 5-point Likert-type scale where $1 = strongly\ disagree$ and $5 = strongly\ agree$. Alphas for the Brazilian sample were .81, .66, .69, and .87, and for the Canadian sample .82, .69, .83, and .85, respectively. An overall well-being Index combined Self-Actualization, Self-Esteem, Satisfaction With Life, and Depression (reversed score) scales (Cronbach's alpha in the Brazilian sample was .78 and in the Canadian sample .74).

Culture fit was assessed using a modified version of the scale developed by Cozzarelli & Karafa (1998). It consisted of 10 items measuring one's sense of connectedness to norms, values, and traditions in one's culture, (e.g., "I often feel that somehow I don't fit into the Brazilian (Canadian) way of life"). Participants used a 5-point rating scale to indicate agreement with the statements. Cronbach's alphas were .73 for Brazilians and .90 for Canadians.

**PROCEDURE OF ESTABLISHING
SCALES' MEASUREMENT EQUIVALENCE**

All questionnaires were translated into Portuguese and then translated back into English by experts fluent in both languages. The necessary editing was done by the translators together with the first author to clarify the content and the meaning of various terms. In addition to the linguistic equivalence, the scales' measurement invariance was tested statistically to ensure the legitimacy of means, correlations, and predictions comparisons across samples. Means and covariance structure analysis (MACS; Little, 1997, 2000), which has demonstrated its validity and applicability in previous research, was used. This analysis was executed by a set of three nested models with different equality constraints on the estimated parameters: an independent model, a model with factorial invariance, and a model with a strong factorial invariance. The Goodness-of-Fit Index (GFI), the root-mean-square error of approximation (RMSEA), the Incremental Fit Index (IFI), and the Comparative Fit Index (CFI) were used to assess model fit. For the GFI, IFI, and CFI, values of about .90 or higher are generally considered acceptable, and for the invariance test we used a difference-in-fit criterion of $< .05$ (Little, 1997). For RMSEA, we used the conventional decision rule: $< .05$ represents a small error of approximation and a very good fit, $.10 > RMSEA > .05$ suggests a reasonable error of approximation, and $> .10$ indicates poor fit. Because of its high sensitivity to the trivial discrepancies between covariance matrices, the likelihood ratio chi-square statistic was not used in the decision making about model acceptability.

TABLE 2
Latent and Observed Means for Four
Perceived Cultural Practices in Brazil and Canada

	Horizontal Individualism		Horizontal Collectivism		Vertical Individualism		Vertical Collectivism	
	Latent	Observed	Latent	Observed	Latent	Observed	Latent	Observed
Brazil	0	3.52_a (0.64)	0	3.66_a (0.69)	0	3.26_a (0.67)	0	3.13_a (0.65)
Canada	−0.11	3.42_a (0.46)	0.15*	3.79_b (0.41)	0.03	3.28_a (0.50)	0.22***	3.34_b (0.46)

NOTE: Standard deviations are in parentheses. The means in the same column that do not share subscripts differ at $p < .01$.
*$p < .10$. ***$p < .01$.

RESULTS

MEASUREMENT INVARIANCE AND MEAN COMPARISONS OF THE PCC, INTERNALIZATION, AND WELL-BEING MEASURES

Comparison of the PCC variables. The PCC variables were made up of four latent constructs reflecting the perception of frequency and importance of HI, HC, VI, and VC practices. Each orientation was represented by three observed indicators, with each indicator consisting of two items. The strong factorial invariance model (with the factor loadings and the intercepts for the observed variables set to be equal across samples and the error variances of the observed indicators and covariances among latent constructs freely estimated) had an acceptable fit, χ^2 ($df = 112$; $N = 271$) = 166.49, $p < .001$; RMSEA = .06 (90% confidence interval [CI] = .04-.08); GFI = .93; CFI = .95; IFI = .95. These results supported the measurement invariance of the PCC scales across samples.

To compare the latent constructs means, the Brazilian sample was assigned as a reference group, with the corresponding means equal to 0. To make a more meaningful comparison, the observed means were also compared across the two samples using t tests. Table 2 presents these mean comparisons, both of the latent and observed data. Canadians saw their culture as more vertically collectivistic ($d = 0.68$) and marginally more horizontally collectivistic ($d = 0.32$) than Brazilian students perceived their culture. After controlling for age, these relations remained the same, except for the marginal effect for HC, which disappeared. There were no gender differences with regard to the perception of cultural context in both samples except for HI. Specifically, women from the Canadian sample perceive their ambient culture as more HI ($M = 3.50$, $SD = 0.42$) in comparison to men ($M = 3.27$, $SD = 0.51$), $t(139) = -2.78$, $p = .006$, $d = 0.47$, whereas women from the Brazilian sample see their cultural context as less HI ($M = 3.29$, $SD = 0.65$) in comparison to men ($M = 3.57$, $SD = 0.63$), $t(120) = 1.93$, $p = .056$, $d = 0.35$. Entering age as a covariate did not change these relationships. Family income did not relate to the perception of cultural context in both samples, except for the VC in the Canadian sample where the students from the families with high and high-high (combined) income perceived their cultural context as more VC than students from low and low-low (combined) families, $F(2, 138) = 2.95$, $p = .055$, $\eta = .20$. Neither size of the city where the participants were born nor their father's and mother's education did relate to the perception of cultural context in both samples. Only in the Brazilian sample, mother's education was negatively related to the perception of HI ($r = -.22$, $p = .02$), meaning

TABLE 3
Latent and Observed Means for the Internalization of
Four Cultural Practices in Brazil and Canada

	Horizontal Individualism		Horizontal Collectivism		Vertical Individualism		Vertical Collectivism	
	Latent	Observed	Latent	Observed	Latent	Observed	Latent	Observed
Brazil	0	6.11_a (3.32)	0	6.05_a (3.27)	0	3.56_a (3.52)	0	5.12_a (3.85)
Canada	–4.20***	3.86_b (2.86)	–3.58***	4.08_b (3.04)	–5.61***	0.67_b (2.69)	–7.60***	0.88_b (3.06)

NOTE: Standard deviations are in parentheses. The means in the same column that do not share subscripts differ at $p < .01$.
***$p < .01$.

that the higher the mother's education, the less the Brazilian participants saw their cultural context as HI.

Comparison of the internalization of cultural practices measures. We created three observed indicators for each latent construct representing the autonomous regulation of each set of practices: HI, HC, VI, and VC. The model with a strong factorial invariance demonstrated an acceptable fit: χ^2 ($df = 112$; $N = 271$) $= 234.45$, $p < .001$; RMSEA $= .08$ (90% CI $= .06$-$.10$; GFI $= .91$; CFI $= .95$; IFI $= .95$. This robust fit allowed us to compare latent and raw means, and Table 3 presents both latent and observed means for each sample's index of internalization for each cultural dimension. The Brazilian sample was used as a reference group, with the latent means assign to be 0. The observed means have subscripts indicating significant between-country differences (*t* tests). Brazilian students had a higher level of autonomous regulation of all four practices in comparison to Canadians, a fact that requires further explorations. Two gender differences were discovered. Women in the Canadian sample internalized HC practices ($M= 4.41$, $SD = 3.04$) more than men ($M = 3.30$, $SD = 2.99$), $t(139) = –1.99$, $p = .05$, $d = 0.34$, and men in the Brazilian sample internalized VC practices ($M = 5.55$, $SD = 3.68$) more than women ($M = 3.34$, $SD = 4.14$), $t(121) = 2.62$, $p = .01$, $d = 0.48$. The Brazilian women's pattern of having lesser internalization of vertical practices replicated results of the previous research (Chirkov et al., 2003), in which women in three of four samples (United States, Russia, and Turkey, but not South Korea) reported less autonomous internalization of vertical practices than the men within their cultures. We may say that there is a tendency for women to be more resistant to the internalization of vertical practices in comparison to men. For family income, only in the Brazilian sample was there a significant *F* for the internalization of VC practices, $F(2, 129) = 7.30$, $p = .001$, $\eta = .33$, meaning that the students from the families with high and high-high (combined) income internalized the VC practices much less in comparison to the participants from the families with the middle income (Bonferroni $= 4.30$, $p = .002$) and with low and low-low (combined) income (Bonferroni $= 3.66$, $p = .002$). There was only one significant correlation between father's and mother's education and internalization scores. Within the Brazilian sample, mother's education was positively associated with the internalization of HI ($r = .17$, $p = .05$).

As suggested by Hypothesis 1, horizontal practices had a higher level of relative autonomy than the vertical ones. The overall mean for horizontal practices (individualistic and collectivistic combined) across the Brazilian and Canadian samples was 5.03 compared to 2.56 for the vertical ones, $t(267) = 8.95$, $p < .0001$, $d = 1.10$. These results were consistent with our previous findings (Chirkov et al., 2003), in which the horizontal practices were

TABLE 4
Latent and Observed Means for the Psychological
Well-Being Indicators in Brazil and Canada

	Self-Actualization		Self-Esteem		Depression		Life Satisfaction		Culture Fit	
	Latent	Observed	Latent	Observed	Latent	Observed	Latent	Observed	Latent	Observed
Brazil	0	3.41_a (0.43)	0	3.74_a (0.59)	0	2.21_a (0.98)	0	3.51_a (0.89)	0	3.24_a (0.63)
Canada	0.15*	3.44_b (0.40)	0.12	3.82_b (0.62)	0.22	2.40_b (0.91)	–0.14	3.37_b (0.83)	0.58***	4.03_b 0.67)

NOTE: Standard deviations are in parentheses. The means in the same column that do not share subscripts differ at $p < .01$.
**$p < .05$. ***$p < .01$.

more internalized in comparison to vertical practices in Russia, South Korea, Turkey, and the United States. Based on our past and present results, we may state that there is a tendency for the horizontal practices, which are built around equality, sharing, respect, and trust, to be internalized more than the vertical ones, which stress obedience to authority, sacrifice of one's own interests, and competition.

Comparisons of the well-being and culture fit variables. For the MACS analysis of well-being constructs, we created two observed indicators for the life-satisfaction variable, whereas the rest of the variables (self-actualization, self-esteem, depression, and culture fit) were each represented by three observed indicators. The strong factorial invariance model fit the data fairly well, $\chi^2(df = 152, N = 271) = 283.61, p < .0001$; RMSEA = .08 (90% CI = .06-.09), GFI = .90; CFI = .94; IFI = .94. These results thus allowed us to compare latent and observed means (see Table 4). On both latent and observed means, Brazilian students were lower on self-actualization ($d = 0.18$) and culture fit ($d = 1.84$). Comparison of observed means also showed Brazilians to experience less depression ($d = 0.21$), greater life satisfaction ($d = 0.19$), but lower self-esteem compared to Canadians ($d = 0.21$). Although our Brazilian students identified themselves less with their cultural norms and traditions, they have a higher level of hedonic well-being, which is related to the lack of negative emotions and presence of life satisfaction, whereas Canadian students were more prone to have eudemonic well-being, which is associated with the actualization of one's potentials and high self-esteem. Overall, the difference between the samples on the composite well-being measure was nonsignificant. In the Brazilian sample, women had higher well-being than men, $t(123) = 1.85, p = .056, d = 0.34$, and there was no gender differences in the Canadian sample. Because family income, parents' education, and the size of the city were not correlated with well-being, we did not use these variables as the covariates for regression analyses which included well-being as the outcome variable.

RELATIONS OF THE INTERNALIZATION OF
CULTURAL PRACTICES TO WELL-BEING

To test Hypothesis 2, that more autonomous regulation of cultural practices is associated with higher well-being in each culture, we conducted between-sample multiple regression analyses with the well-being as an outcome variable and the indices of the internalization of the four cultural practices as predictors. In addition, we used country codes and the interaction between country and the relative autonomy indices as predictors in the between-sample analysis. As shown in Table 5, standardized betas indicate that internalization scores for all four cultural orientations were significantly and positively associated with well-being across

TABLE 5
Regression Analysis of Well-Being Onto Relative Autonomy
of Four Cultural Orientations, Country, and Their Interactions
in Brazilian and Canadian Samples Combined

Variable	B	SE B	β
IHI	.16	.04	.24***
Country	−.14	.28	−.03
Interaction (Country × IHI)	−.04	.09	−.11
IHC	.18	.04	.27***
Country	−.13	.27	−.03
Interaction (Country × IHC)	−.15	.08	−.43*
IVI	.20	.04	.32***
Country	−.29	.28	−.07
Interaction (Country × IVI)	−.17	.08	−.47**
IVC	.16	.04	.31***
Country	−.45	.30	−.10
Interaction (Country × IVC)	−.18	.08	−.61**

NOTE: IHI = Internalization of horizontal individualism; IHC = internalization of horizontal collectivism; IVI = internalization of vertical individualism; IVC = internalization of vertical collectivism.
*$p < .10$. **$p < .05$. ***$p < .01$.

TABLE 6
Within-Sample Regression Analysis of Well-Being Onto Internalization
of Cultural Practices in Brazilian and Canadian Samples

Variable	B	SE B	β
Canada			
IHI	.18	.06	.23***
IHC	.25	.06	.34***
IVI	.31	.06	.37***
IVC	.27	.06	.38***
Brazil			
IHI	.14	.06	.22**
IHC	.10	.06	.16*
IVI	.13	.05	.22**
IVC	.09	.06	.16*

NOTE: IHI = Internalization of horizontal individualism; IHC = internalization of horizontal collectivism; IVI = internalization of vertical individualism; IVC = internalization of vertical collectivism.
*$p < .10$. **$p < .05$. ***$p < .01$.

samples. There were no main effects of a country. However, two significant interactions were obtained. In both cases, the interactions indicated that although the increase in relative autonomy was positively associated with well-being in both countries, this association was less strong in the Brazilians than the Canadians. Standardized regression coefficients from the within-sample analysis are presented in Table 6. They indicate that in both countries the autonomy effects are positive, though less consistently within the Brazilian sample. An ANCOVA was conducted within each sample to control for sociodemographic variables in the above-specified regression analyses. In addition, the interaction effects between the internalization of cultural practices and the covariates were analyzed. The prediction of well-being by the internalization of the four types of cultural practices remained significant after controlling for gender, age, family income, and parents' education. Several interactions with

TABLE 7
Latent and Observed Means for the Parents' and
Teachers' Basic Needs Support in Brazil and Canada

	Parents' Basic Needs Support		Teachers' Basic Needs Support	
	Latent	Observed	Latent	Observed
Brazil	0	3.42_a (0.72)	0	3.20_a (0.55)
Canada	0.48****	3.87_b (0.66)	0.25****	3.43_b (0.51)

NOTE: The means in the same column that do not share subscripts differ at $p < .01$.
****$p < .001$.

the covariates were discovered in the Canadian sample. Specifically, there were interactions between the internalization of HI and gender ($t = 2.44$, $p < .05$) and the same predictor and family income ($t = 3.66$, $p < 05$). The first interaction meant that for women, the internalization of HI was a stronger predictor of well-being than it was for men. As for the second interaction, for the participants from the higher income families, the internalization of HI was a stronger predictor of well-being in comparison to the participants from the lower income families.

COMPARISON OF PARENTS' AND TEACHERS' BASIC PSYCHOLOGICAL
NEEDS SUPPORT AND THEIR RELATIONS TO WELL-BEING

The measurement invariance test of parents' and teachers' BPNS scales revealed their comparability. The strong factorial invariance model had a good fit to the data: χ^2 ($df = 26$, $N = 271$) $= 47.09$, $p = .007$; RMSEA $= .08$ (90% CI $= .04$-.11), GFI $= .94$; CFI $= .98$; IFI $= .98$. Both latent and observed means (see Table 7) were higher for the Canadians: parents' BPNS, $t(266) = 5.47$, $p < .001$, $d = 0.67$, and teachers' BPNS, $t(266) = 3.30$, $p < .001$, $d = 0.40$.

To test Hypothesis 3 concerning the positive relations between BPNS and well-being, we conducted multiple regression analyses within each sample with the well-being indicator predicted by parents' and teachers' support scales entered into the equation simultaneously. For the Canadian sample, this model accounted for 22% of the variance in outcome with R significantly different from 0, $F(2, 141) = 19.76$, $p < .001$. Both parents' (standardized $\beta = .35$, $p < .0001$) and teachers' BPNS (standardized $\beta = .20$, $p < .05$) contributed significantly to the prediction of well-being. In the Brazilian sample, the model also accounted for 22% of the well-being variable variance, $F(2, 114) = 15.66$, $p < .0001$. In this sample, too, both variables predicted well-being significantly. The standardized β for parents' BPNS was .36, $p < .0001$, and for teachers' BPNS was .17, $p = .08$. Thus, despite mean differences suggesting lower need support from parents and teachers as perceived by Brazilian students, the same functional relations obtained across the two samples: The more students perceived support for autonomy, competence, and relatedness, the greater their well-being. No interaction effects were discovered between gender and parents' and teachers' support in predicting well-being. Hypothesis 3 was thus supported.

RELATIONS BETWEEN PERCEIVED CULTURAL CONTEXT,
BASIC NEEDS SATISFACTION, AND INTERNALIZATION

To test our hypotheses about the relations between perceived cultural context, basic needs supports (parents' and teachers' BPNS combined), internalization of cultural practices, and

TABLE 8
Correlations Between Perceived Horizontal Cultural Context, Basic Needs Support, Well-Being, Culture Fit, and Internalization of Horizontal Practices in the Brazilian (upper triangle, *n* = 115) and Canadian (low triangle, *n* = 142) Samples

	1.	*2.*	*3.*	*4.*	*5.*
1. PHOR		.35***	.13*	.25***	.27***
2. BPNS	.20***		.47***	.32***	.19***
3. WB	ns	.46***		.24***	.20**
4. CF	ns	.34***	.21***		ns
5. INTHOR	ns	.20***	.34***	.25***	

NOTE: PHOR = perceived horizontality; BPNS = basic psychological needs support; WB = well-being; CF = culture fit; INTHOR = internalization of horizontal practices.
**p < .05. ***p < .01.

TABLE 9
Correlations Between Perceived Vertical Cultural Context, Basic Needs Support, Well-Being, Culture Fit, and Internalization of Vertical Practices in the Brazilian (upper triangle, *n* = 115) and Canadian (low triangle, *n* = 142) Samples

	1.	*2.*	*3.*	*4.*	*5.*
1. PVERT		ns	ns	ns	ns
2. BPNS	ns		.47***	.32***	.19***
3. WB	−.11*	.46***		.24***	.20**
4. CF	ns	.34***	.21***		.22***
5. INTVERT	ns	.20***	.43***	ns	

NOTE: PVERT = perceived verticality; BPNS = basic psychological needs support; WB = well-being; CF = culture fit; INTVERT = internalization of vertical practices.
*p < .10. **p < .05. ***p < .01.

cultural fit (Hypotheses 4 and 5), we examined the correlations between these variables (see Tables 8 and 9). Because we were specifically focused on horizontal versus vertical practices, we collapsed across VI and VC and across HI and HC practices. The perception of cultural context as more horizontal was associated with greater perceived support for basic needs in both samples. This was not true for the perceived vertical practices, which were unrelated to BPNS in either sample. In addition, in both samples, support for basic psychological needs was associated with greater culture fit. These associations were predetermined exclusively by parents' support (standardized β = .27, p = .01 for Brazilians and standardized β = .26, p = .003 for Canadians), whereas betas for teachers' support were insignificant in both samples. Thus, both our hypotheses got their support, with the last hypothesis more true with regard to parents' BPNS. Similar to our previous results (Chirkov & Ryan, 2001), the BPNS was positively related to more autonomous regulation of both horizontal and vertical practices, thus supporting the idea that the support for psychological needs plays a crucial role not only in promoting a person's well-being but also in fostering cultural identification and boosting internalization of cultural practices.

However, the picture regarding the relations between cultural internalization and culture fit was somewhat different in the two samples. Results showed that in the Canadian sample, culture fit was positively associated with the internalization of horizontal practices, whereas in the Brazilian sample it was related to the internalization of the vertical ones. These rela-

tions indicate that in different cultures, the feeling of identity with one's culture may be associated with the autonomous regulation of different practices, either horizontal or vertical.

DISCUSSION

Culture explains much of the variance in human behavior. Indeed, the diversity of practices, beliefs, and values observed around the globe attests to the power of culture in guiding, if not shaping, human nature (Markus & Kitayama, 1991). However, as Nussbaum (2000) explicates, culture is "not a power machine that stamps out a series of identical humans as so many cookies from a cookie cutter, but a scene of vigorous debate and considerable diversity, where . . . the individual has at least some leeway to move around" (p. 61). Investigating both the way in which cultural norms become anchored in the individual and the conditions that affect this process is thus a task of central importance for cultural psychology.

SDT, by hypothesizing a continuum of relative autonomy representing the degree to which individuals accept and integrate ambient cultural norms, attempts to contribute to our understanding of how an individual fits in within a given cultural climate. The theory suggests not only that various psychological supports predict the degree to which internalization occurs, it also suggests that cultures may be differentially apt at fulfilling needs common to all humans. Thus, in earlier work exploring individualistic and materialistic ideals in American culture, research derived from SDT showed how such values are typically not accompanied by a great deal of autonomy, and they often do not produce the happiness promised by pervasive cultural messages (Kasser & Ryan, 1996; Ryan, Sheldon, Kasser, & Deci, 1995). Indeed, people pursuing and attaining such culturally "valued" goals often exhibit less well-being, a fact inimical to both radical expectancy-valence and culture relativism perspectives (Ryan & Deci, 2003).

Instead, SDT suggests that well-being results from conditions that foster an integration of cultural values within the individual, an integration that is experienced as autonomous functioning. Values and practices are also expected to be most easily integrated when they support the satisfaction of universal psychological needs for autonomy, competence, and relatedness. These strong hypotheses have been controversial, but testing them holds promise for a deeper understanding of the relations between persons and the societies within which they develop. In this study of Brazilian and Canadian students, we extended previous tests of SDT not only by looking at two new cultural settings but also by empirically examining a set of specific theoretically derived hypotheses. The results were complex, but largely supportive of the framework.

A first goal was to replicate the results of previous research (e.g., Chirkov et al., 2003; Chirkov & Ryan, 2001) regarding the positive relations of autonomy (or fuller internalization) and well-being across cultures. Specifically, the results of this study supported two major ideas of the SDT perspective: (a) that cultural orientations (e.g., HI, HC, VI, and VC) can be either autonomously regulated or can be controlled; and (b) independently of the nature of the practices, the more they are internalized or autonomously regulated, the higher the psychological well-being of participants. This finding thus supported the claims of SDT regarding the cross-cultural importance of autonomy. Autonomy as SDT defines it is distinct from individualism and independence and is defined in terms of volition and self-endorsement of behaviors and practices. We suggest that such volitional experience is among the universal conditions for healthy human functioning, despite the highly varied nature of cul-

tural practices that people may engage in. Heteronomy, the opposite of autonomy, relates less well to mental health and well-being, even though it is not always actively resisted.

Despite clear main effects showing positive relations between relative autonomy and well-being in both samples, these relations were somewhat stronger for Canadians relative to Brazilians, whereas in Chirkov et al.'s previous results there was no moderation of this effect by country. Looking at a within-sample level, results revealed that whereas the relative autonomy for individualistic practices was significantly related to well-being for the Brazilians, autonomy for collectivistic practices was only marginally positively related. This moderation effect was not predicted and deserves further investigation as a manifestation of cultural variation and specificity. However, in interpreting this result it should be noted that autonomy was relatively high among the Brazilians across both types of cultural practice.

The hypothesis regarding the cross-sample importance of supports for basic psychological needs for promoting well-being was also verified. In both Brazilians and Canadians, perceived basic needs support from teachers and parents predicted substantial variance in well-being. Furthermore, in both samples, those who experienced support for these needs from parents experienced greater cultural identification. According to SDT, frustration of basic needs leads to estrangement and alienation, whereas supports foster wellness and congruence. Data from this study supported this formulation.

A second theme in this research was the claim that not all cultural orientations are equally easy to internalize, nor equal in the degree to which they foster individual well-being. In particular, we argued that vertical orientations might be more problematic in both regards. Results supported this view by revealing that for both our Canadian and Brazilian participants, horizontal practices were substantially more fully internalized than vertical practices. These results support the claim that horizontality-verticality, which has been less in focus than the collectivistic-individualistic axis of Triandis's (1996) cultural model, is relevant to human functioning, and that the horizontal dimension may be more congruent, on average, with basic need satisfaction (Deci & Ryan, 2000). Horizontal practices also appear to be associated with more positive well-being. In addition to this, we found results indicating that where gender differences emerge, women are less inclined than men to internalize vertical practices, a finding noted in several of Chirkov et al.'s (2003) samples. This finding fits with speculations of evolutionary theorists such as Ehrlich (2000), who suggests that women's relationships and labor were more horizontally organized in the era of evolutionary adaptation and thus may be more congruent with their evolved preferences. Alternatively, it is also plausible to argue that when it comes to vertical relationships in modern society, it may be women who are more often expected to play a subordinate role, which potentially poses more conflict for them when facing this cultural norm.

Another approach to the issue of why horizontal practices may be more readily internalized concerns their relations with basic need supports. The current data suggested that the more socializers support basic psychological needs, the more the individual views his or her cultural context as horizontal. Vertical relationships, by contrast, tend by nature to be less consistent with the concept of BPNS, which, according to SDT, involves accepting the other's perspective, acknowledging the other's needs, values, and desires, providing options and supporting their competence (Ryan & Deci, 2000). Societies that endorse horizontal practices tend to convey that their members have the right and power to construct a life, a meaning, and an identity for themselves in relation to the groups of their society. People in these kinds of societies are treated as equal by others and can choose the groups to which they will belong. Because hierarchical structures are not as highly valued in horizontal societies,

those people in positions of authority, such as parents, teachers, and managers, are more likely to be autonomy and competence supportive and to endorse social bonds based on equality, liberty, and mutual respect (Friedman, 1999). If this is true, then it is not surprising that horizontal societies would tend to facilitate greater need satisfaction than vertical societies. Further research is needed to confirm the relation between horizontality and need support, as these factors clearly influence enculturation, mental health, and affiliations.

All these considerations, however, must be tempered by several limitations of the current study. First and foremost, our samples were college students in the two target countries, who may by virtue of their privileges and education have much in common and who do not represent their cultures as a whole. We assume that autonomy in particular may be more salient among those more educated parts of a population, as may horizontality in social relations. Second, we studied only two countries in this research. Though this study extends upon Chirkov et al.'s prior four-country study and numerous other related studies based in SDT, the world contains hundreds of relatively distinct cultural backdrops.

Some limitations arose due to the methodology of the study with its one-time cross-sectional design and the exclusive use of self-report measures. The cross-sectional design substantially limited our ability to infer the causal relation between the variables, allowing us to only observe the patterns of correlations predicted by our theoretical framework. The longitudinal design with the opportunity to investigate both within- and between-subject relations is one of the directions for our further studies. The use of self-report measures was predetermined by the nature of the variables included in the theoretical model, but the use of more objective indicators of cultural context, well-being, and levels of autonomy that reflect the current postpositivist tendency for triangulation (Cook, 1985; Crano, 1981) will definitely benefit our future research.

Claims of universality will require much more research to be confirmed, and no doubt the more countries studied, the more specific concerns and constructs will need to be in focus. Finally, we applied in this study constructs derived from a theory of Western origins (Deci & Ryan, 1985). Ho (2003) has also called for complementary studies in which indigenously derived constructs are developed and employed. We strongly believe in the value of that approach, as indigenous measures will undoubtedly add to our understanding of culturally specific social-psychological dynamics and better explicate the highly variegated forms of human flourishing across the globe.

NOTE

1. *Need for autonomy* represents the tendency to be the perceived origin or source of one's own behavior. Individuals experience their autonomous behavior as an expression of their self and as acts emanated from their interest and integrated values. *Need for competence* refers to the tendency to feel effectiveness in one's ongoing interactions with the social environment and to experience opportunities to exercise and express one's capacities. Competence is not an attained skill or capability but rather is a felt sense of confidence and effectance in action. It differs from Bandura's (1989) "self-efficacy," which is an expectation regarding one's future actions; competence is a feeling of being effective, capable, and successful that accompanies one's behavior. *Need for relatedness* is a tendency to feel connected to others, to care for others and be cared for by those others, to have a sense of belongingness both with other individuals and with one's community. It concerns the psychological sense of being with others in secure communion or unity (Ryan & Deci, 2002).

REFERENCES

Asakawa, K. (1998). The experience of interdependence and independence in the self-construal of Asian-American and Caucasian-American adolescents: Feelings of connectedness and academic motivation. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *60*(6-B), 3019.

Asakawa, K., & Csikszentmihalyi, M. (2000). Feeling of connectedness and internalization of values in Asian American adolescents. *Journal of Youth and Adolescence*, *29*, 121-145.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*, 1175-1184.

Brislin, R. (2000). *Understanding culture's influence on behavior* (2nd ed.). Fort Worth, TX: Harcourt College Publishers.

Chirkov, V. I. (2001). *A study of the internalization of cultural practices in college samples from South Korea, Russia, Turkey and the U.S.: A self-determination theory perspective on culture and well-being*. Unpublished doctoral dissertation, University of Rochester, Rochester, NY.

Chirkov, V. I., & Ryan, R. M. (2001). Parent and teacher autonomy-support in Russian and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-Cultural Psychology*, *32*, 618-635.

Chirkov, V. I., Ryan, R. M., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: A self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology*, *84*(1), 97-110.

Cook, T. D. (1985). Postpositivist critical multiplism. In L. Shotland & M. M. Mark (Eds.), *Social science and social policy* (pp. 21-62). Beverly Hills, CA: Sage.

Cozzarelli, C., & Karafa, J. A. (1998). Cultural estrangement and terror management theory. *Personality and Social Psychology Bulletin*, *24*(3), 253-267.

Crano, W. D. (1981). Triangulation and cross-cultural research. In M. B. Brewer & B. E. Collins (Eds.), *Scientific inquiry and the social sciences* (pp. 317-344). San Francisco: Jossey-Bass.

Cross, S. E., & Gore, J. S. (2003). Cultural models of the self. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 536-564). New York: Guilford.

D'Andrade, R. G. (1984). Cultural meaning systems. In R. A. Shweder & R. A. Levine (Eds.), *Culture theory: Essays on mind, self, and emotion* (pp. 88-119). Cambridge, UK: Cambridge University Press.

D'Andrade, R. G. (1992). Schemas and motivation. In R. G. D'Andrade & C. Strauss (Eds.), *Human motives and cultural models* (pp. 23-44). Cambridge, UK: Cambridge University Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination theory of human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. *Personality and Social Psychology Bulletin*, *27*, 930-942.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*, 71-75.

Diener, E., & Suh, E. M. (2000). Measuring subjective well-being to compare the quality of life of cultures. In E. Diener & E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 3-12). Cambridge, MA: Bradford.

Downie, M., & Koestner, R. (2003, June). *The impact of cultural internalization and integration on well-being among tricultural individuals*. Paper presented at the Canadian Psychological Association annual convention, Hamilton, Canada.

Doyal, L., & Gough, I. (1991). *A theory of human needs*. New York: Guilford.

Ehrlich, P. R. (2000). *Human natures: Genes, cultures, and the human prospect*. Washington, DC: Island Press.

Friedman, L. M. (1999). *The horizontal society*. New Haven, CT: Yale University Press.

Grolnick, W. S. (2003). *The psychology of parental control: How well-meant parenting backfires*. Mahwah, NJ: Lawrence Erlbaum.

Harrison, L. E. (1992). *Who prospers? How cultural values shape economic and political success*. New York: Basic Books.

Ho, S. M. Y. (2003, February). *Positive psychology in Chinese culture: Research and practice*. Paper presented at the International Positive Psychology Summit, Washington, DC.

Hofstede, G. (1997). *Culture and organization: Software of the mind*. New York: McGraw-Hill.

Jones, A., & Crandal, R. (1986). Validation of a short index of self-actualization. *Personality and Social Psychology Bulletin*, *12*, 63-73.

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

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, *22*, 280-287.

LeVine, R. A. (1973). *Culture, behavior, and personality*. Chicago: Aldine.

Little, T. D. (1997). Mean and covariance structures (MACS) analysis of cross-cultural data: Practical and theoretical issues. *Multivariate Behavioral Research*, *32*, 53-76.

Little, T. D. (2000). On the comparability of constructs in cross-cultural research: A critique of Cheung and Rensvold. *Journal of Cross-Cultural Psychology*, *31*, 213-219.

Lonner, W. J., & Adamopoulos, J. (1997). Culture as antecedent to behavior. In J. W. Berry, Y. H. Poortinga, & J. Pandey (Eds.), *Handbook of cross-cultural psychology* (Vol. 1, pp. 43-84). Boston: Allyn & Bacon.

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

Markus, H. R., Kitayama, S., & Heiman, R. J. (1996). Culture and basic psychological principles. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 857-913). New York: Guilford.

Miller, J. G. (1999). Cultural conceptions of duty: Implications for motivation and morality. In D. Munroe, J. F. Schumaker, & S. C. Carr (Eds.), *Motivation and culture* (pp. 178-192). New York: Routledge.

Nussbaum, M. C. (2000). Emotions and social norms. In L. P. Nucci, G. B. Saxe, & E. Turiel (Eds.), *Culture, thought, and development. The Jean Piaget symposium series* (pp. 41-63). Mahwah, NJ: Lawrence Erlbaum.

Oishi, S. (2000). Goals as cornerstones of subjective well-being: Linking individuals and cultures. In E. Diener & E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 87-112). Cambridge, MA: Bradford.

Radloff, L. (1977). The CED-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385-401.

Robbin, R. J. (1994). *Parental autonomy support versus control: Children and parent correlates and assessment*. Unpublished doctoral dissertation, University of Rochester, Rochester, NY.

Rosenberg, M. (1965). *Society and adolescent self-image*. Princeton, NJ: Princeton University Press.

Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy and the self in psychological development. In J. Jacobs (Ed.), *Nebraska Symposium on Motivation: Developmental perspectives on motivation* (Vol. 40, pp. 1-56). Lincoln: University of Nebraska Press.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, *63*, 397-427.

Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin*, *25*(12), 1509-1524.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*, 749-761.

Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological-Inquiry*, *11*(4), 319-338.

Ryan, R. M., & Deci, E. L. (2001). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78.

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3-33). Rochester, NY: The University of Rochester Press.

Ryan, R. M., & Deci, E. L. (2003). On assimilating identities to the self: A self-determination theory perspective on internalization and integrity within cultures. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 253-272). New York: Guilford.

Ryan, R. M., Deci, E. L., & Grolnick, W. S. (1995). Autonomy, relatedness, and the self: Their relation to development and psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 1. Theory and methods* (pp. 618-655). New York: John Wiley.

Ryan, R. M., & Lynch, J. (1989). Emotional autonomy versus detachment: Revisiting the vicissitudes of adolescence and young adulthood. *Child Development*, *60*, 340-356.

Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1995). All goals are not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwizer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 7-26). New York: Guilford.

Sheldon, K. M., Elliott, A. J., Kim, Y., & Kasser, T. (2001). What's satisfying about satisfying events? Comparing ten candidate psychological needs. *Journal of Personality and Social Psychology*, *80*, 325-339.

Sheldon, K. M., Elliot, A. J., Ryan, R. M., Chirkov, V. I., Kim, Y., Wu, C., et al. (2004). Self-concordance and subjective well-being in four cultures. *Journal of Cross-Cultural Psychology*, *35*(2), 209-223.

Singelis, T. M., Triandis, H. C., Bhawuk, D. P. S., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research*, *29*(3), 240-275.

Spiro, M. E. (1961). Social systems, personality, and functional analysis. In B. Kilborne & L. L. Langness (Eds.), *Culture and human nature. Theoretical papers of Melford E. Spiro* (pp. 109-222). Chicago: The University of Chicago Press.

Stewart, S. M., Bond, M. H., Ho, L. M., Zaman, R. M., Dar, R., & Anwar, M. (2000). Perceptions of parents and adolescent outcomes in Pakistan. *British Journal of Developmental Psychology*, *18*, 335-352.

Strauss, C. (1992). Models and motives. In R. G. D'Andrade & C. Strauss (Eds.), *Human motives and cultural models* (pp. 1-20). Cambridge, UK: Cambridge University Press.

Tooby, J., & Cosmides, L. (1992). The psychological foundations of culture. In J. H. Barkov, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 19-136). New York: Oxford University Press.

Triandis, H. C. (1996). *Individualism and collectivism.* Boulder, CO: Westview.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, *74*(1), 118-128.

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 271-360). San Diego, CA: Academic Press.

Willams, G. C., Gagne, M., Ryan, R. M., & Deci, E. L. (2002). Facilitating autonomous motivation for smoking cessation. *Health Psychology*, *21*, 40-50.

Valery I. Chirkov is an assistant professor at the University of Saskatchewan. He is affiliated with the Culture and Human Development and Applied Social Psychology graduate programs. His research interests concern cross-cultural studies of motivation and social behavior, psychology of immigration, and acculturation and relations between culture and well-being.

Richard M. Ryan is a professor of psychology, psychiatry and education at the University of Rochester. He is a clinical psychologist whose research interests focus on human motivation, psychological needs, and well-being in development and across cultures.

Chelsea Willness, B.A. (honours), is a graduate student in industrial/organizational psychology at the University of Calgary. Her research interests include diversity and discrimination in the workplace and antecedents, consequences, and prevention of workplace harassment.