
Balance Across Contexts: Importance of Balanced Need Satisfaction Across Various Life Domains

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Self-determination theory posits that satisfaction of three basic psychological needs—autonomy, competence, and relatedness—are required for psychological well-being, and a recent study showed that the balance in the satisfaction of these three needs independently affects well-being. The present investigation builds on these findings by examining the balance of adolescents' need satisfaction across distinct life contexts. The results of three studies show that adolescents who experience a balance of need satisfaction across important life contexts, including at school, at home, with friends, and in part-time jobs, reported higher well-being and better school adjustment. This finding emerged consistently across four countries and across multiple measures of school adjustment, including teacher reports. Together, these results support previous research that highlights the importance of consistency for psychological functioning.

Keywords: *self-determination theory; psychological need satisfaction; adolescents; adjustment*

Adolescence is a time when individuals begin to discover themselves and to explore different roles. Many contexts take on greater importance, with friends, school, and family responsibilities all vying for attention.

Adolescents' experiences in each of these contexts can play a crucial role in adjustment and in developmental outcomes. We are interested in one specific aspect of that experience, namely, the extent to which basic psychological needs are satisfied in each context. In addition to the amount of need satisfaction in each context, we expect that an imbalance in the extent to which basic

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psychological needs are met across contexts can have important consequences for adolescent adjustment.

Self-Determination Theory and Psychological Need Satisfaction

Self-determination theory (SDT; Deci & Ryan, 2000, 2008) uses the concept of innate, universal, psychological needs to understand human motivation and development. Unlike other theories that consider needs to be individual differences, where people might experience different levels of a need such as a need for achievement or for power, self-determination theory views needs as nutrients that are universally required for psychological health (Deci & Ryan, 2008). The main question posed by SDT concerns not the amount of a need but the degree to which each need is satisfied for each individual. Three psychological needs are considered to be essential: the needs for autonomy, competence, and relatedness. Autonomy refers to the experience of choice and personal endorsement of one's activities and actions. Competence refers to feelings of mastery over one's environment and the ability to bring about desired outcomes. Finally, relatedness reflects feelings of closeness and connection with significant others. According to SDT, the key to healthy development and adaptation in a given context is the amount of psychological need satisfaction one experiences in that context (Deci & Ryan, 2000).

Many studies have assessed need satisfaction in a given context, relating it to outcomes in that particular context. These contexts include school (Filak & Sheldon, 2003), sports (Perreault, Gaudreau, Lapointe, & Lacroix, 2007; Reinboth & Duda, 2006), work (Baard, Deci, & Ryan, 2004; Deci et al., 2001), leisure (Ryan, Rigby, & Przybylski, 2006), and with significant others (Deci, LaGuardia, Moller, Scheiner, & Ryan, 2006; Patrick, Knee, Canevello, & Lonsbary, 2007). However, another central tenet of SDT is that optimal functioning requires that all three needs be fulfilled overall, or in all important life contexts, as any social environment that thwarts needs is thought to lead to negative effects on well-being outcomes (Deci & Ryan, 2008). Many researchers have tested this proposition by assessing need satisfaction "in general" and relating this to various well-being outcomes (e.g., Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). However, few studies have attempted to examine need satisfaction simultaneously in multiple contexts. One such study assessed need satisfaction with diverse relational partners (i.e., parents, roommate, best friend, etc.; La Guardia, Ryan, Couchman, & Deci, 2000), showing that need satisfaction experienced in each relationship predicted security of attachment in that relationship. Another study found that need satisfaction in different contexts differentially predicted various aspects of concurrent and future well-being (Véronneau, Koestner, & Abela, 2005). Although

these studies highlight the importance of examining need satisfaction in multiple contexts, they have not examined the questions of whether the balance of need satisfaction across diverse contexts has an impact on psychological adjustment and optimal functioning.

Social Contexts in Adolescence

Adolescence is a period of change, with youth undergoing developmental, cognitive, emotional, and social transformations. A primary goal of adolescence is to figure out who one is and where one fits into society (Erikson, 1959). Adolescents explore various values, lifestyles, peer networks, and vocations, often taking on different roles and developing a variety of role-related selves across social contexts (Harter, Bresnick, Bouchey, & Whitesell, 1997). Indeed, many decades ago, Bronfenbrenner (1979) emphasized the importance of looking at multiple contexts when examining adolescent development. The feedback and support adolescents receive in each context will often be a key determinant of whether this life stage is successfully resolved (La Guardia & Ryan, 2002).

The importance of social contexts in adolescence is highlighted by self-determination theory, with many studies showing that contexts that support autonomy, competence, and relatedness lead to greater well-being and better outcomes among adolescents. For example, teachers' autonomy support was shown to predict higher students' grades (Black & Deci, 2000), whereas students who perceive their school environment to be supportive of their autonomy and competence were found to be less likely to consider dropping out of high school (Vallerand, Fortier, & Guay, 1997). Similarly, parental autonomy support was shown to lead to greater academic motivation and well-being in a sample of Russian and American high school students (Chirkov & Ryan, 2001) and higher levels of adjustment in school, social competence, and job-seeking behaviors (Soenens & Vansteenkiste, 2005). In addition, both parental autonomy support and relational support were shown to be conducive to greater well-being and more autonomous reasons for going to college (Niemi et al., 2006). These findings were also replicated in the context of sports, with adolescents' perception of their coaches' autonomy support (Gagné, Ryan, & Bargmann, 2003) and coaches' focus on mastery and improvement (Reinboth, Duda, & Ntoumanis, 2004) related to adolescents' well-being and motivation for the sport.

Although numerous studies have examined the outcomes of autonomy-supportive environments for adolescents, very few studies have considered the other needs or directly examined need satisfaction in this age group. One study that did so (Véronneau et al., 2005) examined the link between satisfaction of the three basic needs in third and seventh graders and well-being measures of affect and depressive symptoms assessed

concurrently with need satisfaction and then again 6 weeks later. Unlike adult need satisfaction scales that either assess need satisfaction in a general manner (e.g., Reis et al., 2000; Sheldon & Niemiec, 2006) or in one specific context (e.g., sports, Vlachopoulos & Michailidou, 2006; work, Baard et al., 2004), the adolescent scale created by Véronneau and her colleagues (2005) measures need satisfaction in three different contexts, namely, at school, at home, and with friends. These contexts were selected because previous research indicated they were ranked among the most important by young people (Blais, Vallerand, Briere, Gagnon, & Pelletier, 1990). Véronneau and colleagues found that need satisfaction in each of the contexts differentially predicted various aspects of concurrent or future well-being. However, the analyses combined both the children and the adolescent data, precluding any conclusions about need satisfaction in adolescents alone, and did not examine the consequences of an imbalance between these three contexts.

Balance of Need Satisfaction

Recently, a novel approach was taken by Sheldon and Niemiec (2006), who examined the balance in the amount of satisfaction of the three basic psychological needs of autonomy, competence, and relatedness. Based on previous research in the domains of personal variability and work/life balance, they hypothesized that individuals who experience a balanced level of satisfaction in all three needs would exhibit greater psychological health than those who experience the same total amount of need satisfaction distributed in an imbalanced manner. In a series of four studies testing this proposition, university students' balance of need satisfaction was found to affect concurrent subjective well-being and happiness as well as prospective well-being even when the level of satisfaction of each individual need was controlled.

In their studies, Sheldon and Niemiec (2006) assessed either general need satisfaction in participants' lives or satisfaction in a single specific context (e.g., "with my mother," Study 4) without distinguishing the potential differences in need satisfaction that individuals may experience across various contexts in their life. We propose that an individual can experience an imbalance in the amount of need satisfaction in various life domains, such as a teenager who finds school interesting and likes her teacher but belongs to a group of teens where she feels pressured to perform certain behaviors to fit in. We expect that variability across contexts occurs more often than variability across needs and as such could be an especially important contributor to well-being and adjustment. Specifically, as need satisfaction is a function of environment support (Deci & Ryan, 2008), it would appear more likely that such support would vary

across different contexts than across types of needs. Previous research has found that autonomy-supportive environments predict satisfaction of all three needs in that context, not of only one need in particular (Sheldon & Krieger, 2007). There is also evidence that satisfaction of the needs for autonomy, relatedness, and competence in a specific context tend to be highly correlated (Véronneau et al., 2005). It is thus somewhat difficult to imagine how across all of a person's varied contexts, one need would be consistently less satisfied than another. By contrast, it is easier to think of circumstances where an individual's needs are satisfied in one context (e.g., at school) but not in others (e.g., home or work).¹ We thus believe that aggregating the three needs in each important life domain and examining the difference in need satisfaction across important life contexts could provide an important insight on the role of need satisfaction in each context as well as on the impact of balanced need satisfaction across contexts.

Previous research in various domains of social psychology has emphasized the importance of consistency for psychological functioning. A large variability in self-esteem (Kernis, 2005), personality patterns (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), and attachment security (La Guardia et al., 2000) have all been found to be negatively related to numerous well-being variables. That is, research suggests that over and above the effect of an individual's level of self-esteem or attachment security, the extent to which the individual shows consistency across either time or situations will independently and positively relate to well-being outcomes. We expect that a consistency, or balance, of need satisfaction across important domains in adolescence will similarly be beneficial for adolescent adjustment.

Present Studies

In the present investigation, we sought to address the aforementioned questions regarding need satisfaction in various life contexts and the balance of need satisfaction across those contexts. In a series of three studies, we examined a variety of contexts important in adolescence, exploring need satisfaction at school, at home, with friends, and in part-time jobs. We also used a diverse number of adjustment indicators, including well-being, school drop-out intentions, and teacher-rated adjustment. In all our studies, satisfaction of the three needs was aggregated by context for ease of comparison between contexts. Our research had two goals—first, to shed light on the importance of need satisfaction in various domains in adolescence, and second, to determine whether balanced need satisfaction across contexts is beneficial for adolescents' well-being and adjustment independently of the additive effects of need satisfaction in each context. Our central hypothesis was that the balance of adolescents'

need satisfaction across domains would predict well-being and adjustment over and above the main effects of the levels of need satisfaction in each individual domain.

STUDY 1

In Study 1 we assessed adolescents' need satisfaction with friends, at home, and at school and examined how need satisfaction in these contexts and the balance among the contexts relate to well-being and school adjustment. Thus far, the only study that examined need satisfaction in different contexts in adolescents (Véronneau et al., 2005) found that need satisfaction at home and at school, but not with friends, was related to well-being. However, in that study, the analyses were performed on the aggregated data of both children and adolescents. As friends and peer groups exert greater influence in adolescence than in childhood, it is possible that need satisfaction with friends does in fact play an important role in this life stage. Our first goal for this study was thus to revisit Véronneau et al.'s (2005) analysis of need satisfaction across contexts in adolescents. We hypothesized that need satisfaction in each context would be positively related to well-being. Our second hypothesis was that the balance of need satisfaction across contexts would also be positively related to well-being independently of the total need satisfaction in each individual context.

In addition to assessing general well-being, we were interested in the effects of need satisfaction on school adjustment. As previous studies have shown that autonomy-supportive parents and teachers can influence school outcomes (e.g., Guay, Ratelle, & Chanal, 2008), we hypothesized that satisfaction of the basic needs at school and at home but not with friends would be related to school adjustment. We also predicted that balanced need satisfaction among the various life contexts would have a positive impact on school adjustment, as reported both by the participants themselves and by their teachers.

To obtain a more varied sample, we recruited participants from three different countries (Canada, the United States, and France). Additional analyses controlling for country effects were performed to ensure that balance across contexts was related to adjustment across the various populations. Finally, as we expected the role of balance across contexts to differ from that of balance across needs, we performed additional analyses to verify that balance across contexts would have effects that were independent of those obtained for Sheldon and Niemiec's (2006) balance across needs measure.

Method

Participants and Procedure

We used data collected as part of a cross-cultural study on overscheduling and well-being (Gingras, 2007).

Participants were 720 adolescents (52.1% female) ages 11 to 18 (mean age 14.5 years old) from three Western countries along with a sample of teachers who completed questionnaires about their students ($N = 264$). With permission from the principals, students were recruited from two high schools in California, United States (44.6%); two high schools in Quebec, Canada (34.2%); and two high schools in France (21.3%) for a study of extracurricular and school activities and well-being. In each school, students completed questionnaires during an allotted time during the school day and teachers were asked to complete a brief questionnaire evaluating each of their students.

Measures

Although students completed a number of questionnaires, only those relevant to the present study will be described here.

Well-being. Participants completed a nine-item scale of affect (Emmons, 1992) that included four positive (e.g., joyful) and five negative (e.g., frustrated) items. Participants rated each item based on how much they have felt that way over the past several days on a scale of 1 (*very slightly or not at all*) to 5 (*extremely*). The scales have excellent temporal reliability and internal consistency (Diener & Emmons, 1984). As a further measure of well-being and adjustment, we measured participants' positive self-concept (Anderman, 2002) using six statements (e.g., "I like myself just the way I am") rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The reliability for each measure was $\alpha = .87$ for positive affect, $\alpha = .75$ for negative affect, and $\alpha = .83$ for self-concept. As these three scales were correlated ($r = .37$ to $.47$, all $ps < .001$), a composite measure of well-being was created by taking a mean of the standardized scores for each scale.

Need satisfaction. We assessed need satisfaction using the Children's Intrinsic Need Satisfaction Scale (Véronneau et al., 2005). This scale consists of 18 items that assess adolescents' autonomy, competence, and relatedness across three contexts—at home (e.g., "I feel I have a choice about when and how to do my household chores"), at school (e.g., "My teachers like me and care about me"), and with friends (e.g., "I feel my friends think that I am good at things"). Three 6-item subscales were created assessing need satisfaction for each context.² Responses were made on a 5-point scale, ranging from 1 (*not at all true*) to 5 (*very true*). The reliability for each context subscale was as follows: at home $\alpha = .74$, at school $\alpha = .73$, with friends $\alpha = .80$.

We followed the procedure used by Sheldon and Niemiec (2006) to compute a measure of need balance, using the subscales of need satisfaction in the different contexts instead of the satisfaction of the individual needs. The measure of need balance was thus computed by

TABLE 1: Means, Standard Deviations, and Intercorrelations of Study Variables: Study 1

| Measure | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------------------------|-------------------|------|---------|--------|---------|---------|--------|---------|---------|-------|---|
| Demographic Factors | | | | | | | | | | | |
| 1. Age | 14.47 | 1.53 | — | | | | | | | | |
| 2. Gender | | | .02 | — | | | | | | | |
| Needs in context | | | | | | | | | | | |
| 3. Home | 3.85 _a | 0.71 | -.06 | -.02 | — | | | | | | |
| 4. School | 3.45 _b | 0.72 | -.11** | .03 | .52*** | — | | | | | |
| 5. Friends | 4.26 _c | 0.61 | -.02 | .11** | .32*** | .35*** | — | | | | |
| 6. Context balance | 4.11 | 1.22 | -.09* | -.03 | .42*** | .68*** | -.06 | — | | | |
| Adjustment measures | | | | | | | | | | | |
| 7. Well-being | 0.00 | 0.78 | -.10** | -.08* | .51*** | .49*** | .41*** | .36*** | — | | |
| 8. Drop-out intentions | 1.29 | 0.63 | .08* | -.06 | -.20*** | -.24*** | -.02 | -.25*** | -.16*** | — | |
| 9. Teacher-rated adjustment | 3.57 | 0.95 | -.22*** | .30*** | .14* | .25*** | .03 | .27*** | .13* | -.15* | — |

NOTE: The values for the gender variable are 1 = male, 2 = female. Means with different subscripts are significantly different, $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

summing the absolute value of the difference between each pair of contexts and then reversing it so that higher scores reflect greater balance. This was done by subtracting each participant's score from the highest observed score, which in this sample was 6.33.

Drop-out intentions. Drop-out intentions were assessed using three items rated on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). The items were "I am thinking of quitting school," "I sometimes think about quitting school," and "Every year, I wonder if I will continue my studies." The first two items were taken from a previous study of drop-out intentions (Vallerand et al., 1997), and the third item was added to increase the scale reliability. Previous research (Vallerand et al., 1997) has shown that drop-out intentions are significantly related to actual instances of dropout. The reliability of the three-item scale was $\alpha = .77$.

Teachers' ratings of adjustment. Teachers evaluated each child on four items measuring the child's levels of optimism (adapted from Scheier & Carver, 1985; e.g., "This child usually expects to have a good day") and on four items assessing the child's self-efficacy (adapted from Schwarzer & Jerusalem, 1995) using a 1 (*not at all true*) to 5 (*completely true*) scale. As these two measures were highly correlated ($r = .86$, $p < .001$), we combined all the items to create a measure of teacher-rated school adjustment, $\alpha = .96$.

Preliminary Analyses

We first examined whether demographic variables were related to any of our variables of interest. As both age and gender were significantly correlated with some of our dependent variables, we controlled for them in all subsequent analyses. Table 1 presents the means, standard deviations, and intercorrelations of the measures of age and gender, need satisfaction in each of the three contexts,

balance of need satisfaction across contexts, and the measures of adjustment. Need satisfaction in each of the three contexts was correlated with well-being, and both need satisfaction at school and at home were related to drop-out intentions and teacher ratings of adjustment. We also found that there were significant differences in reported levels of need satisfaction across contexts, $F(2, 718) = 412.29$, $p < .001$, with adolescents reporting highest need satisfaction with friends and lowest need satisfaction in school.

Results and Discussion

Primary Analyses

To test the relation of need satisfaction in important life contexts and of balance across contexts to well-being, a hierarchical multiple regression was performed on the composite measure of well-being. Age and gender were entered in Step 1 of the regression. Next we entered need satisfaction in each of the three contexts, and then balance of needs across contexts was entered in Step 3. Table 2 presents the standardized regression coefficients (betas), t statistics, and significance levels for each of the predictors. Both age and gender were found to be significantly related to well-being, with older children and girls experiencing lower levels of well-being. Need satisfaction in each context was found to be significantly positively related to well-being, $\beta = .24$ for need satisfaction in school, $\beta = .31$ for need satisfaction at home, and $\beta = .23$ for need satisfaction with friends ($p < .001$ for all three contexts). The second step of the regression model accounted for a significant change of explained variance, ΔR^2 of .37, $F(3, 712) = 142.99$, $p < .001$. In addition, need balance across contexts was a significant positive predictor of well-being above each individual need, $\beta = .16$, $p < .001$; $\Delta R^2 = .011$, $F(1, 711) = 13.07$, $p < .001$.

To examine the effect of balance across contexts on school adjustment, we performed the same hierarchical multiple regressions on the two variables of school

TABLE 2: Standardized Regression Coefficients of Dependent Measures on Need Satisfaction Across Contexts: Study 1

| Predictors | Well-Being | | | Drop-out Intentions | | | Teachers' Ratings of Self-Regulation | | |
|--|------------|-------|--------|---------------------|-------|--------|--------------------------------------|-------|--------|
| | β | t | p | β | t | p | β | t | p |
| Set 1: | | | | | | | | | |
| Well-being: $\Delta R^2 = .02, p < .01$ | | | | | | | | | |
| Drop-out intentions: $\Delta R^2 = .01, p < .05$ | | | | | | | | | |
| Teachers' ratings of self-regulation: $\Delta R^2 = .14, p < .001$ | | | | | | | | | |
| Age | -.10 | -2.76 | .006 | .08 | 2.13 | .033 | -.23 | -3.91 | < .001 |
| Gender | -.08 | -2.14 | .033 | -.06 | -1.68 | .094 | .31 | 5.36 | < .001 |
| Set 2: | | | | | | | | | |
| Well-being: $\Delta R^2 = .37, p < .001$ | | | | | | | | | |
| Drop-out intentions: $\Delta R^2 = .07, p < .001$ | | | | | | | | | |
| Teachers' ratings of self-regulation: $\Delta R^2 = .06, p < .001$ | | | | | | | | | |
| Home | .31 | 8.69 | < .001 | -.13 | -2.90 | .004 | .04 | 0.67 | .506 |
| School | .24 | 6.87 | < .001 | -.20 | -4.67 | < .001 | .24 | 3.51 | .001 |
| Friends | .24 | 7.36 | < .001 | .10 | 2.58 | .010 | -.11 | -1.81 | .072 |
| Set 3: | | | | | | | | | |
| Well-being: $\Delta R^2 = .01, p < .001$ | | | | | | | | | |
| Drop-out intentions: $\Delta R^2 = .01, p < .05$ | | | | | | | | | |
| Teachers' ratings of self-regulation: $\Delta R^2 = .02, p < .05$ | | | | | | | | | |
| Context balance | .16 | 3.62 | < .001 | -.12 | -2.21 | .027 | .19 | 2.18 | .030 |
| Well-being: $R^2 = .401, F(6, 711) = 78.23, p < .001$ | | | | | | | | | |
| Drop-out intentions: $R^2 = .09; F(6, 704) = 11.21, p < .001$ | | | | | | | | | |
| Teachers' ratings of self-regulation: $R^2 = .22 F(6, 256) = 11.80, p < .001$ | | | | | | | | | |

NOTE: The values for the gender variable are 1 = male, 2 = female.

adjustment: drop-out intentions³ and teacher ratings of adjustment. Age and gender were entered in the first step of the regression as control variables. We then entered need satisfaction in each of the three contexts in the next step, and then the balance of need satisfaction across contexts was entered in Step 3 (see Table 2 for a summary of the results). Results showed that need satisfaction in school was the strongest of the three contexts in predicting both measures of school adjustment, whereas need satisfaction at home was a significant predictor of drop-out intentions only. An unexpected finding was that need satisfaction with friends was negatively related to school adjustment. Higher need satisfaction with friends significantly predicted higher drop-out intentions and was a marginal negative predictor of teacher ratings of adjustment. As expected, balance of need satisfaction across contexts was a significant negative predictor of drop-out intentions ($\Delta R^2 = .01, p < .05$) and positive predictor of teacher-rated adjustment ($\Delta R^2 = .02, p < .05$).

Additional Analyses

Two additional sets of analyses were performed to test the robustness of our findings. To ensure that the

effect of balance across contexts is not redundant with the effect of balance across the various needs, we computed a measure of balance across needs in the same way as Sheldon and Niemiec (2006). The two measures of balance were only modestly correlated, $r = .16, p < .001$. We then repeated the regressions but included balance across needs in Step 2 along with need satisfaction in each context and then balance across contexts in Step 3. Balance across needs was not significant for any of the dependent variables, $\beta_s \leq .05$. Balance across contexts remained a significant predictor for well-being ($\beta = .16$), drop-out intentions ($\beta = -.12$), and teacher-rated adjustment ($\beta = .18$) after balance across needs was taken into account, $ps < .05$. This supports our assumption that balance of need satisfaction across contexts is a separate construct from balance of the needs themselves.

We also tested for possible country effects to ensure that balance across contexts had a positive relation to adjustment in all three countries assessed in this study. As there were differences in need satisfaction across the three countries,⁴ we examined possible interactions between need satisfaction and participants' country. The three country categories were dummy coded into two variables and entered in the first step of the

regression to control for the variance due to country effects (as recommended by Cohen & Cohen, 1983). The interaction between each of the two dummy-coded country variables and need satisfaction in each context and need balance were entered in the fourth step of the regression. This step was not significant for well-being, $\Delta F(8, 701) = 1.51, ns$; drop-out intentions, $\Delta F(8, 694) = 1.41, ns$; or teacher-rated adjustment, $\Delta F(8, 246) = 1.33, ns$. As none of the country interactions explained any additional variance in our dependent measures, this suggests that balance of need satisfaction across contexts serves a similar role across countries.

Brief Discussion

This study provided initial support for our balance across contexts hypothesis and revealed some interesting effects of need satisfaction in each context for a number of different dependent variables. As expected, need satisfaction in each of three different contexts was positively related to well-being. Whereas Véronneau and colleagues (2005) found need satisfaction with friends to be unrelated to well-being in children, this difference in results is most likely due to the age difference in the samples as Véronneau and her colleagues surveyed much younger children. As friends gain greater prominence in adolescents' lives, need satisfaction experienced with one's peers becomes increasingly important.

An interesting finding that emerged in this study was the negative relation between need satisfaction with friends and school adjustment (although it was only significant for drop-out intentions and marginal for teacher ratings of adjustment). This suggests that students whose needs for autonomy, competence, and relatedness are satisfied with their friends are more likely to report wanting to drop out of school and were rated as somewhat less adjusted by their teachers. As we had no information on students' peer groups, we were unable to examine the reasons for this negative association. However, we would expect that it stems from differences in the values held by adolescents' friends. If adolescents are part of a peer group that does not value education and they experience high need satisfaction in that peer group, this norm of educational disengagement can become internalized and negatively affect school outcomes.

Most important, we found support for our hypothesis related to balance across contexts, showing that adolescents who experienced balance of need satisfaction in important life contexts reported greater well-being, lower drop-out intentions, and were rated as better adjusted by their teachers. This relation was not reducible to the main effects of need satisfaction in each context and persisted when we controlled for balance across needs and for country effects.

STUDY 2

In Study 1, we showed that variability in need satisfaction across life contexts was negatively associated with adolescents' well-being and adjustment as rated by teachers and positively associated with drop-out intentions in three Western countries. In Study 2, we sought to replicate these findings and extend them to an Eastern culture. Research in self-determination theory has supported the proposition that despite differences in reported mean levels, the importance of need satisfaction of autonomy, competence, and relatedness for psychological well-being is universal across cultures (e.g., Chirkov, Ryan, & Willness, 2005; Sheldon, Elliot, Kim, & Kasser, 2001). Likewise, we expected that although Chinese adolescents might report different levels of needs satisfaction than Western adolescents in important life contexts, the function of these contexts and of the balance between contexts on adjustment would be similar. As in Study 1, we hypothesized that need satisfaction in each context would be related to well-being and that need satisfaction at home and at school would be related to drop-out intentions. Most important, we expected that balance of need satisfaction across contexts would be positively related to well-being and drop-out intentions independently of the levels of need satisfaction in each individual context. As in Study 1, we also tested for balance across needs as a potential confound.

Method

Participants and Procedure

Three schools were recruited in Yinchuan, the capital of the Chinese province of Ningxia. The principals of the schools agreed to participate in the study and recruited classes in which the survey was administered. In all, 581 Chinese adolescents completed the survey (55.9% female). The mean age of the participants was 15.78 years, with ages ranging from 12 to 18. In each school, students completed questionnaires during an allotted time during the school day.

Measures

Participants completed the same set of measures as in Study 1. The questionnaires were translated from English to Mandarin by a translator in Montreal and then verified again in China to ensure adherence to the regional dialect.

Well-being. As in Study 1, a composite measure of well-being was created using the standardized scores of positive affect, negative affect, and self-concept.

Need satisfaction. As in Study 1, need satisfaction was assessed at home, at school, and with friends using the

TABLE 3: Means, Standard Deviations, and Intercorrelations of Study Variables: Study 2

| Measure | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------------|-------------------|------|-------|--------|--------|--------|--------|--------|--------|---|
| Demographic factors | | | | | | | | | | |
| 1. Age | 15.78 | 1.58 | — | | | | | | | |
| 2. Gender | 1.56 | 0.50 | -.01 | — | | | | | | |
| Needs in context | | | | | | | | | | |
| 3. Home | 3.24 _a | 0.83 | .05 | -.02 | — | | | | | |
| 4. School | 3.05 _b | 0.80 | .05 | -.02 | .47** | — | | | | |
| 5. Friends | 3.77 _c | 0.81 | .02 | .04 | .29** | .45** | — | | | |
| 6. Context balance | 4.94 | 1.41 | .09* | -.08* | .33** | .32** | -.38** | — | | |
| Adjustment measures | | | | | | | | | | |
| 7. Well-being | 0.00 | 0.82 | -.05 | -.14** | .39** | .38** | .25** | .20** | — | |
| 8. Drop-out intentions | 1.76 | 0.95 | .24** | .00 | -.18** | -.17** | -.05 | -.14** | -.21** | — |

NOTE: The values for the gender variable are 1 = male, 2 = female. Means with different subscripts are significantly different, $p < .001$. * $p < .05$. ** $p < .01$.

Children's Intrinsic Need Satisfaction Scale (Véronneau et al., 2005). The reliability for each context subscale was as follows: at home $\alpha = .74$, at school $\alpha = .73$, with friends $\alpha = .79$. A measure of need balance across contexts was then computed by summing the absolute value of the difference between each pair of contexts and then reversing this measure by subtracting each participant's score from the highest observed score, which in this sample was 7.33.

Drop-out intentions. Adolescents' drop-out intentions were measured with the same three items as in Study 1. The reliability of the scale was $\alpha = .80$.

Results and Discussion

Preliminary Analyses

Table 3 presents the means, standard deviations, and intercorrelations of the measures of age and gender, need satisfaction in each of the three contexts, balance of need satisfaction across contexts, and adjustment. As in Study 1, need satisfaction in each context was significantly positively correlated with well-being and with each other. Need balance across contexts was positively correlated with well-being and positively correlated with need satisfaction at school and at home but negatively correlated with need satisfaction with friends. As in Study 1, we found that there were significant differences in reported levels of need satisfaction across contexts, $F(2, 579) = 201.28$, $p < .001$, with adolescents reporting highest need satisfaction with friends and lowest need satisfaction in school.

Primary Analyses

As in Study 1, we performed two hierarchical multiple regressions, using well-being and drop-out intentions as the dependent variables, to test our

hypotheses. Age and gender were entered in the first step of the regression as control variables. We then entered need satisfaction in each of the three contexts in the next step, and then the balance of need satisfaction across contexts was entered in Step 3. Table 4 presents the standardized regression coefficients (betas), t tests, and significance levels for each of the predictors. Need satisfaction in each context was found to be significantly related to well-being, $\beta = .22$ for need satisfaction in school, $\beta = .26$ for need satisfaction at home, and $\beta = .08$ for need satisfaction with friends ($p < .05$ for all three contexts). The second step of the regression model accounted for change of explained variance, $\Delta R^2 = .20$, $F(3, 569) = 49.69$, $p < .001$. In the third step, need balance across life contexts was a significant positive predictor of well-being, $\beta = .15$, $p = .005$; $\Delta R^2 = .01$, $F(1, 568) = 7.78$, $p = .005$. Chinese teenagers who experienced greater need balance across contexts reported significantly higher well-being.

The same regression was then performed with drop-out intentions as the dependent variable. Need satisfaction at home and at school was negatively related to drop-out intentions ($\beta = -.14$, $p < .005$ for both), while need satisfaction with friends was unrelated. The second step of the regression model accounted for a significant change of explained variance, $\Delta R^2 = .05$, $F(3, 567) = 10.28$, $p < .001$. In addition, the balance of need satisfaction across contexts was a marginally significant negative predictor of drop-out intentions, $\beta = -.10$, $p = .07$, with students who reported greater balance reporting fewer intentions to quit school.⁵

Additional Analyses

To ensure that the effect of balance across contexts is not redundant with the effect of balance across the

TABLE 4: Standardized Regression Coefficients of Dependent Measures on Need Satisfaction Across Contexts: Study 2

| Predictors | Well-Being | | | Drop-Out Intentions | | |
|---|------------|-------|--------|---------------------|-------|--------|
| | β | t | p | β | t | p |
| Set 1: | | | | | | |
| Well-being: $\Delta R^2 = .02, p < .01$ | | | | | | |
| Drop-out intentions: $\Delta R^2 = .06, p < .001$ | | | | | | |
| Age | -.05 | -1.28 | .200 | .24 | 5.81 | < .001 |
| Gender | -.14 | -3.37 | .001 | .00 | -0.04 | .971 |
| Set 2: | | | | | | |
| Well-being: $\Delta R^2 = .20, p < .001$ | | | | | | |
| Drop-out intentions: $\Delta R^2 = .05, p < .001$ | | | | | | |
| Home | .26 | 6.24 | < .001 | -.14 | -3.06 | .002 |
| School | .22 | 4.79 | < .001 | -.14 | -2.87 | .004 |
| Friends | .08 | 1.97 | .049 | .05 | 1.18 | .240 |
| Set 3: | | | | | | |
| Well-being: $\Delta R^2 = .01, p < .01$ | | | | | | |
| Drop-out intentions: $\Delta R^2 = .01, p = .07$ | | | | | | |
| Context balance | .15 | 2.79 | .005 | -.10 | -1.82 | .069 |
| Well-being: $R^2 = .24, F(6, 568) = 29.18, p < .001$ | | | | | | |
| Drop-out intentions: $R^2 = .11, F(6, 566) = 11.64, p < .001$ | | | | | | |

NOTE: The values for the gender variable are 1 = male, 2 = female.

various needs, we again computed a measure of balance across needs. The two measures of balance were only modestly positively correlated, $r = .09, p < .05$. We then repeated the regressions but included balance across needs in Step 2 along with need satisfaction in each context and then balance across contexts in Step 3. Balance across needs was a marginal predictor of well-being in Step 2 ($\beta = .07, p = .06$), becoming nonsignificant once balance across contexts was entered in Step 3. Balance across needs was also not significant for drop-out intentions, $\beta = .06, p > .15$. Balance across contexts remained a significant positive predictor for well-being ($\beta = .14, p < .01$) and a marginal negative predictor of drop-out intentions ($\beta = -.10, p < .10$) after balance across needs was taken into account.

Brief Discussion

This second study replicated the main results of our first study in a very different culture. Whereas need satisfaction in each of the three contexts predicted psychological well-being, the balance of need satisfaction across contexts played an additional role, relating to well-being independently of the need satisfaction in each context. Similar results were found for drop-out intentions; although the results for balance across contexts were only marginally significant, they were in the expected direction. This suggests that the importance of balance across contexts is not simply a Western phenomenon but like the satisfaction of the needs for autonomy, competence, and relatedness, universal across cultures.

One area in which the results of the Chinese sample differed from the Western sample was in the role of need satisfaction with friends in both well-being and drop-out intentions. Whereas need satisfaction with friends was a strong predictor of well-being in the Western sample, it played a much smaller (though still significant) role in the Chinese sample. In addition, whereas in Western countries need satisfaction with friends appeared to exert a negative influence by contributing to higher drop-out intentions, no such relation was found in the Chinese sample.

STUDY 3

To extend the results of the first two studies, we examined need satisfaction in a different context, namely, at work. Similarly to school, work is a performance-based context and as such is a different environment from home and friends, which are more relationally based. Part-time employment is common among adolescents, with recent surveys showing that 28% of American high school students engage in a part-time job (U.S. Bureau of Labor Statistics, 2009). Part-time employment represents an arena of independence outside of home and school in which adolescents gain social competencies and material rewards for an independent life with peers (Dryfoos, 1998). Although many parents feel that part-time employment is beneficial for their adolescent children (Aronson, Mortimer, Zierman, &

Hacker, 1996), some research has also found that working long hours appears to be negatively associated with school outcomes such as performance and positively associated with drop-out intentions (e.g., Marsh & Kleitman, 2005; Stern & Briggs, 2001). Studies assessing the quality of high school students' part-time work experiences found that adolescents who reported more compatibility between school and work experienced lower depressive affect, as did those who felt that work did not have a negative impact on their grades (Mortimer, Harley, & Staff, 2002).

In this study, we address the issues of the quality of work experiences and the compatibility of school and work from a self-determination theory perspective. Whereas previous studies have explored a number of different factors that can influence the impact of work on school outcomes, no research has examined the effects of psychological need satisfaction at work on school drop-out intentions. We predict that need satisfaction at school but not at work will be negatively related to drop-out intentions and more importantly that the balance of need satisfaction between these two contexts will predict lower drop-out intentions after controlling for need satisfaction in each context.

Method

Participants and Procedure

Participants were 1,068 high school students in Grades 9 through 11 who reported working more than 10 hours per week (53.7% female, 11 did not report gender). Participants were recruited from 24 high schools across five school boards from the Laurentian area of Quebec, Canada. Data for the study were collected as part of an ongoing project on youth employment and school perseverance organized by the PREL (Partenaires pour la Réussite Educative dans les Laurentides), a nonprofit organization in the Laurentian region of Quebec whose mandate is to increase school success and perseverance among the youth in the region. A brief survey, which took no longer than 10 minutes to complete, was distributed at each high school by youth counselors from the participating school boards. Students voluntarily completed the questionnaire and returned it to the youth counselors. Due to survey length restrictions, this study did not include a measure of well-being.

Measures

Grade point average (GPA). Participants were asked to report their grade point average for the current academic year. As the data collection took place in the last months of the school year, it provided an accurate assessment of students' academic average for that year.

Number of hours worked. Students were asked to report the number of hours on average that they worked each week.

Drop-out intentions. Adolescents' drop-out intentions were measured with the same three items as in Study 1. The reliability of the scale was $\alpha = .79$.

Need satisfaction. Need satisfaction was assessed in the school and work contexts. Nine items adapted from the basic need satisfaction at work scale (Baard et al., 2004) were rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). For each question (e.g., "Most of the time I feel competent"), participants provided a response for both the academic and work settings. Need satisfaction in each context was computed by averaging the answers to the nine items in each setting. The reliability for the need satisfaction scales was $\alpha = .81$ at school and $\alpha = .84$ at work.

The divergence of need satisfaction between the two contexts was computed by calculating the absolute value of the difference in need satisfaction between the two contexts. A measure of balance between contexts was computed by subtracting each participant's divergence score from the highest observed score, which in this sample was 3.

Results and Discussion

Preliminary Results

Table 5 presents the means, standard deviations, and intercorrelations of our study variables.⁶ Female students reported higher grades and lower drop-out intentions than males. As expected, need satisfaction in school and at work were significantly positively correlated with each other as well as with the balance of need satisfaction across contexts. Drop-out intentions were significantly negatively correlated with need satisfaction in each context as well as with balance across contexts. Participants experienced similar levels of need satisfaction at school and at work, $t = 1.30$, *ns*.

Primary Analyses

A hierarchical multiple regression was performed on drop-out intentions. Gender, GPA, and average hours worked were entered in the first step of the regression as control variables. We then entered need satisfaction at school and at work in the next step, and then the balance of need satisfaction across contexts was entered in Step 3. Table 6 presents the standardized regression coefficients (betas), *t* tests, and significance levels for each of the predictors. In the first step, hours worked and grade point average were significant predictors of

TABLE 5: Means, Standard Deviations, and Intercorrelations of Study Variables: Study 3

| Measure | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------------------------|-------|------|---------|---------|---------|---------|--------|---------|---|
| 1. Gender | | | — | | | | | | |
| 2. Hours worked | 20.19 | 7.24 | -.14*** | — | | | | | |
| 3. Grade point average | 75.01 | 9.50 | .14*** | -.15*** | — | | | | |
| 4. School need satisfaction | 3.90 | 0.62 | .08* | -.06 | .17*** | — | | | |
| 5. Work need satisfaction | 3.92 | 0.66 | .03 | .04 | .08* | .45*** | — | | |
| 6. Context balance | 2.55 | 0.50 | -.02 | -.01 | .03 | .31*** | .19*** | — | |
| 7. Drop-out intentions | 1.57 | 0.84 | -.09* | .14*** | -.22*** | -.26*** | -.11* | -.13*** | — |

NOTE: The values for the gender variable are 1 = male, 2 = female.
p* < .05. *p* < .01. ****p* < .001.

drop-out intentions, $\beta = .11$ and $\beta = -.20$, respectively (*ps* < .01). Only need satisfaction at school and not at work was a significant negative predictor of drop-out intentions in the second step of the regression, $\beta = -.22$, *p* < .001. The second step of the regression model accounted for a significant change of explained variance, $\Delta R^2 = .05$, $F(2, 819) = 21.53$, *p* < .001. Although need satisfaction at work was not a significant predictor of drop-out intentions, the balance of need satisfaction between the school and work contexts was significant, $\beta = -.08$, $\Delta R^2 = .006$, $F(1, 818) = 5.83$, *p* = .016.⁷ That is, teenagers who were higher in school satisfaction and who also reported high need satisfaction at work were especially likely to report lower drop-out intentions.⁸

Additional Analyses

To ensure that the effect of balance across contexts is not simply due to the effect of balance across the various needs, we again computed a measure of balance across the three needs (Sheldon & Niemiec, 2006). The two measures of balance were only modestly positively correlated, *r* = .11, *p* < .001. We then repeated the regressions but included balance across needs in Step 2 along with need satisfaction in each context and then balance across contexts in Step 3. Balance across needs was not significant for drop-out intentions, $\beta = -.02$. Balance across contexts remained a significant positive predictor for drop-out intentions ($\beta = -.08$, *p* < .02) after balance across needs was taken into account.

Brief Discussion

Whereas our first two studies focused on academic, family, and peer settings, this study highlighted the importance of part-time work as a significant setting in adolescents' lives. Research conducted thus far on adolescents' part-time work suggests the possibility that work experiences can either interfere with or facilitate students' school engagement. One might worry that

TABLE 6: Standardized Regression Coefficients of Drop-Out Intentions on Need Satisfaction Across Contexts: Study 3

| Predictors | β | t | p |
|---|---------|-------|--------|
| <u>Set 1:</u> | | | |
| $\Delta R^2 = .06$, <i>p</i> < .001 | | | |
| Gender | -.05 | -1.45 | .146 |
| Hours worked | .11 | 3.26 | .001 |
| Grade point average | -.20 | -5.76 | < .001 |
| <u>Set 2:</u> | | | |
| $\Delta R^2 = .05$, <i>p</i> < .001 | | | |
| School | -.22 | -5.73 | < .001 |
| Work | -.01 | -0.14 | .887 |
| <u>Set 3:</u> | | | |
| $\Delta R^2 = .01$, <i>p</i> < .05 | | | |
| Context balance | -.08 | -2.41 | .016 |
| $R^2 = .12$, $F(6, 818) = 18.40$, <i>p</i> < .001 | | | |

NOTE: The values for the gender variable are 1 = male, 2 = female.

students who felt highly autonomous, competent, and related in their work environment would perhaps invest more in this domain and decrease their engagement in the academic domain. Our results show that need satisfaction at work was not associated with school disengagement. Indeed, work need satisfaction was positively associated with school need satisfaction and unrelated to drop-out intentions. This is good news in that it suggests that the presence of need satisfaction in a teenager's work environment does not pull them away from pursuing their academic goals.

In addition, after controlling for school need satisfaction, the balance of need satisfaction across the work and school contexts was a significant predictor of lower drop-out intentions. This suggests that whereas need satisfaction in a part-time job is not directly related to drop-out intentions, students who experience high need satisfaction at school and also high satisfaction at work report lower intentions to abandon their education. This could indicate that there is something fundamental about a balance in two important domains that can boost confidence in

future pursuits. As school is an avenue for a future entry into the workforce, experiencing high need satisfaction at work could further encourage future school commitment in those students who are already experiencing need satisfaction at school. Our results also support previous research on part-time jobs in adolescence that has found compatibility between school and work was related to lower depressive affect (Mortimer et al., 2002).

GENERAL DISCUSSION

Self-determination theory has long recognized that the basic psychological needs of autonomy, competence, and relatedness are necessary for optimal functioning and for integration of social norms and values in every life context (Deci & Ryan, 2000). Recently, Sheldon and Niemiec (2006) showed that the balance between these three needs independently affects well-being. Our studies build on these findings by examining the balance of need satisfaction across important life contexts. In three studies with more than 2,300 adolescents across four countries we found that the balance of need satisfaction across life contexts is significantly related to well-being as well as school adjustment. Participants who experienced greater balance between important life domains reported being happier, were less likely to consider dropping out of high school, and were rated as better adjusted by their teachers.

Whereas previous research (Sheldon & Niemiec, 2006) has examined the role of balance of need satisfaction across the three needs, we proposed that individuals can experience an imbalance in the amount of need satisfaction across various life domains. Based on evidence that need satisfaction is largely contextually determined (Deci & Ryan, 2008) and that levels of need satisfaction across the three needs tend to be highly correlated in a particular situation (Véronneau et al., 2005), we hypothesized that variability across contexts occurs more often than variability across needs and as such should be an especially important contributor to well-being and adjustment. Our results indicated that the balance of need satisfaction across contexts was only modestly positively related to Sheldon and Niemiec's (2006) measure of balance across needs and that balance across contexts was significantly associated with the outcome variables even after controlling for balance across needs. This supports our proposition that need satisfaction in important life domains is differentiated from the satisfaction of the three needs and that a balance in need satisfaction across life domains is uniquely linked to well-being and adjustment.

In the most recent summary of their self-determination theory research, Deci and Ryan (2008) noted that the

theory was developed to generate principles that can be applied to understand people's phenomenological experience across life's domains. The theory has generated a vast amount of research elaborating the importance of satisfying the needs for autonomy, competence, and relatedness in many applied domains. However, variations in need support across diverse contexts and their impact on adjustment and adaptation have only begun to be examined by SDT researchers (i.e., La Guardia et al., 2000; Veronneau et al., 2005). The results of the present study clearly suggest that contextual balance in the experience of autonomy, competence, and relatedness may significantly impact young people's well-being and pursuit of success. Specifically, our results indicate that need satisfaction in one context does not compensate for need satisfaction in other important contexts, providing further evidence for SDT's assumption that the needs are nutrients that people need consistently throughout all aspects of their lives.

Having established the importance of balance in need satisfaction across contexts as contributing unique variance to youth's adjustment, it is important to consider specific mechanisms that may mediate this relationship. Two likely mediators are role conflict and lack of self-concept clarity (Campbell, 1990). Young people who experience marked need satisfaction discrepancies across the major settings in their life (home, work, friends, and school) may experience greater role conflict, which in turn will impair their well-being and adaptation. It also seems possible that contextual need imbalances among adolescents may thwart the important developmental process of establishing a secure and resilient personal identity (McAdams, 2004) and of attaining a clear self-concept. Previous research on adolescent development has found that adolescents develop multiple self-representations across different roles and contexts (e.g., Harter et al., 1997). As adolescents develop the cognitive skills used to compare single abstractions, they begin to recognize the conflicts that opposing attributes (e.g., depressed with parents but happy with friends; Harter & Monsour, 1992) pose without yet being able to integrate them into one coherent self-theory, often resulting in distress as they attempt to reconcile these opposing identities (Harter et al., 1997). Self-determination theory explains that identities are "adopted in the service of basic psychological needs" (Ryan & Deci, 2002, p. 254); thus, those identities in which the needs are satisfied will be more internalized and assimilated into the self. An imbalance of need satisfaction across contexts could lead to the internalization of some identities as genuine and the enactment of other roles for external or introjected reasons. This should be especially problematic for adolescents, who are unable to reconcile the conflict caused by the often opposing identities, leading to an

unclear self-concept. As high self-concept clarity has previously been linked to greater well-being and psychological health (Campbell et al., 1996), it could be considered as a potential mediator of the need balance across contexts to well-being path; future research is needed to test this proposition.

In addition to being implicated in role conflict in adolescents, variability of need satisfaction across contexts can potentially provide an alternative explanation for the negative effects resulting from work–family imbalance found by research in organizational psychology (e.g., Ford, Heinen, & Langkamer, 2007; Greenblatt, 2002). Although this literature has focused on stress, time-based pressures, and role conflict as responsible for the imbalance and the ensuing negative effects, our research suggests that psychological needs could offer an alternative explanation. The thwarting of the needs for autonomy, competence, and relatedness either at work or in the family would create an imbalance of need satisfaction across contexts, which we have shown to be related to diminished well-being. This argument is indirectly supported by a study that examined work–family conflict from a self-determination theory perspective (Senecal, Vallerand, & Guay, 2001). The study found that feeling valued by one's partner and feeling that one's autonomy is supported by one's employer predicted autonomous motivation for family and for work, respectively, both of which then predicted lower levels of family alienation, work–family conflict, and emotional exhaustion. In addition, the study demonstrated the importance of reciprocal effects between personal domains as negative interpersonal factors both at home and at work influenced (through motivation) alienation and exhaustion. This provides further theoretical support for our current findings pertaining to the importance of balance across contexts.

Although our studies examined need balance across a number of different contexts, these contexts are by no means exhaustive of what is important in adolescents' lives. Contexts such as sports, extracurricular activities, and even relationships with other significant adults could also provide need satisfaction and play an important role in children's lives. Future studies should assess need satisfaction in the contexts that adolescents consider as most important. Future studies should also prospectively test the impact of need balance across contexts and should examine other populations such as children and adults to ensure that the importance of balance across contexts holds true across development.

Another important direction for future research is to examine the mechanisms through which need satisfaction in important contexts and context balance are related to adjustment. According to self-determination theory, autonomy, competence, and relatedness in a given context are important ingredients for promoting the

integration of social norms and values of that context (Deci & Ryan, 2000). Our findings, which show that students who experience need satisfaction at school report lower drop-out intentions, suggest that these students have internalized the value of school. In addition, our research suggests that other contexts that support these norms and values play an additional role in their internalization. The value of school persistence would presumably be imparted to the adolescents by their parents as well as their teachers, which is reflected in the influence need satisfaction at home has on drop-out intentions. Experiencing need satisfaction across a number of contexts that impart similar values allows for greater integration of the values, in this case the importance of school. Future research should explicitly test these links, identifying how integration of social norms and values operates across contexts. It would also be important in future research to examine the role of need satisfaction in situations where norms or values conflict across contexts—for example, when teachers promote the importance of education but one's peer group holds a different set of values.

In conclusion, the present investigation is unique in its exploration of adolescents' need satisfaction across life contexts and how this relates to well-being and school outcomes. Our results demonstrated that not only is it important for teens to experience high levels of need satisfaction in contexts such as home, school, friends, and work but that the balance of need satisfaction across such contexts also plays a critical role. Moreover, our study suggested that the importance of teenagers' balance of need satisfaction across contexts appears to hold true across very different cultures as well as across different outcomes.

NOTES

1. In their article, Sheldon and Niemiec (2006) illustrated the importance of balance across needs by providing an example of a businessman who owns a successful business and is experiencing high levels of competence and autonomy at work (a score of 6 on a scale of 1 to 7) but does not have enough time to spend with his family and thus has a low satisfaction of the need for relatedness (a score of 3). However, a closer examination of this example reveals that this entrepreneur can be conceptualized as experiencing an imbalance in need satisfaction across contexts (high need satisfaction at work, low need satisfaction with family) rather than across needs *per se*.

2. To create Sheldon and Niemiec's (2006) measure of need balance, three six-item subscales are created to assess satisfaction of each need instead of need satisfaction for each context.

3. The results were essentially unchanged when a log transformation was applied to the drop-out variable to control for skewness and kurtosis.

4. Participants from France experienced significantly lower need satisfaction at school and lower balance than participants from Canada and the United States.

5. The results were essentially unchanged when a log transformation was applied to the drop-out variable to control for skewness and kurtosis.

6. We included grade point average and number of hours worked as controls in this study because previous work with these data (Gagnon, 2007) found these variables to be strongly related to drop-out intentions.

7. The results were essentially unchanged when a log transformation was applied to the drop-out variable to control for skewness and kurtosis.

8. We replicated this effect through a different analysis—in the third step of the regression, instead of including balance across contexts, we included an interaction product of Need at School \times Need at Work, which was significant ($\beta = .08, p < .05$). This interaction shows that the relationship between need satisfaction at school and drop-out intentions is qualified by need satisfaction at work such that students high in school need satisfaction are particularly unlikely to drop out of school when they also experience high need satisfaction at work.

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