

Parental Autonomy-Support, Intrinsic Life Goals, and Well-Being Among Adolescents in China and North America

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Received: 1 June 2009 / Accepted: 3 September 2009 / Published online: 22 September 2009
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Abstract Self-determination theory proposes that prioritizing intrinsic life goals, such as community involvement, is related to well-being, whereas focusing on extrinsic life goals, such as financial success, is associated with lower well-being and that parenting influences the type of life goals that youth adopt. In a sample of 515 Chinese (56% female, mean age = 15.50) and 567 North American (52% male, mean age = 14.17) adolescents, a model of the relationships between parenting, life goals, and well-being was investigated and confirmed for intrinsic life goals. Across societies, autonomy-supportive parenting was associated with the endorsement of intrinsic life goals, which in turn was associated with well-being. Intrinsic life goals partially mediated the relationship between parental autonomy-support and well-being. These findings suggest that, cross-culturally, prioritizing intrinsic life goals is related to increased well-being among adolescents and that parents could encourage intrinsic life goals by being supportive of their children's autonomy.

Keywords Life goals · Self-determination theory · Well-being · Parenting · Autonomy-support · Adolescence

Introduction

Piaget (1967) described adolescents as philosophers trying to make meaning of life and discover their place in the world. Adolescence is a key developmental period for forming life goals, which concern the objectives that individuals consciously form to direct their lives over time (Schmuck and Sheldon 2001). Self-determination theorists have distinguished these life goals as either intrinsic or extrinsic. Intrinsic life goals, such as satisfying relationships, personal growth, and community contribution, are thought to be inherently satisfying and to be congruent with the psychological needs for autonomy, relatedness, and competence (Ryan and Deci 2000). Extrinsic life goals, such as fame, attractiveness, and wealth depend on the contingent reaction of others and are typically engaged in as a means to an end (Kasser 2002a). According to self-determination theory, the needs for autonomy, competence and relatedness must be satisfied for individuals to experience healthy growth and development. Individuals who put more emphasis on intrinsic rather than extrinsic life goals are likely to benefit from enhanced psychological health and well-being.

Researchers have demonstrated that striving for intrinsic life goals is related to greater well-being, whereas prioritizing extrinsic life goals is related to poorer well-being (see Kasser and Ryan 1993, 1996; Kim et al. 2003; Ryan et al. 1999 for examples). This work has been conducted primarily with adults (see Williams et al. 2000; Cohen and Cohen 1996 for exceptions). However, adolescence is an important stage for understanding the development of life goals. Therefore, the objectives of the present investigation were to examine the relationship between adolescent life goals and well-being and the role of parental autonomy-support in the development of intrinsic versus extrinsic life goals among a large North American and Chinese sample.

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The Emphasis on Extrinsic over Intrinsic Life Goals

In the past, adolescents relied largely on cultural traditions in forming their life goals, whereas modern life presents them with a plethora of choices and responsibilities (Schwartz 2000). Many life goals celebrated in popular culture are materialistic or extrinsic in nature. The widespread prevalence of extrinsic life goals is evident in two recent surveys of young people in the United States. According to a sample of 18–25 year-olds, getting rich is their generation's most important goal, followed by becoming famous (Pew Research Center 2007). Young people ranked these goals above more intrinsic goals such as helping people who need help, being community leaders, and spirituality. Similarly, in a survey conducted by UCLA and the American Council on Education, being very well-off financially was the top-ranked goal, among 19 goals (Myers 2000). College participants ranked wealth above being an authority in one's field, helping others in difficulty, and raising a family. The rise in extrinsic life goals was evident in the ratio of students stating that a very important reason for their going to college was to earn more money, which increased from one in two in 1971 to three in four in 1998 (Astin et al. 1987; Sax et al. 1998). The increase in striving to be financially well-off was paired with a corresponding decrease in striving to develop a meaningful philosophy of life. Across two large surveys, young people have indicated that they tend to value extrinsic life goals, such as wealth, above intrinsic life goals such as community, helping others, and self-growth.

Life Goals, Well-Being, and Culture

At the same time that the pursuit of extrinsic life goals is so highly endorsed, most Americans value being happy as an important part of life and the pursuit of happiness has increasingly become global (Diener et al. 1995). However, researchers have shown that focusing on extrinsic life goals, such as wealth, is associated with poorer well-being, as measured by self-report and clinical interviews of individuals' vitality, depression, anxiety, social functioning, and physical ailments, while valuing intrinsic life goals, such as community involvement, is related to enhanced well-being (Kasser and Ryan 1993, 1996). These findings have been replicated in different nations, including Russia (Ryan et al. 1999), Germany (Schmuck et al. 2000), and Korea (Kim et al. 2003). Although there is evidence that females rate intrinsic life goals higher than males (Kasser and Ryan 1993), the differential association of intrinsic and extrinsic life goals with well-being indicators appears to be consistent across gender. Researchers have further shown that income level within US samples is not associated with life goals (Kasser and Ryan 1996). Paradoxically, the pursuit of happiness through extrinsic life goals is highly valued, yet across

culture, gender, and income levels, striving for intrinsic rather than extrinsic life goals is associated with well-being.

More recently, researchers examined life goals among over 1,800 undergraduate students in 15 countries (Grouzet et al. 2005). In line with the work of Schwartz et al. (2001) on universally recognized human values, intrinsic and extrinsic goals emerged as basic goals across nations. Life goals formed a circumplex model, in which a focus on extrinsic goals opposed focusing on intrinsic goals. That is, striving for financial success, an attractive image, and being popular opposed goals for community feeling (improving the world), affiliation, and self-acceptance. The circumplex model of goal contents held in both wealthier and poorer countries, although there were some cross-cultural differences. For example, in poorer countries, striving for financial success tended to fall less with the extrinsic goals and more with safety and physical health goals. This finding is in line with the work of other researchers who have found that once human beings have had their basic needs met there is no clear relation between wealth and happiness (Diener and Biswas-Diener 2002; Kasser 2002a; Myers and Diener 1996). The research by Grouzet et al. (2005) confirms the relevance of the intrinsic/extrinsic distinction in life goals across 15 countries, including China, Canada, and the US.

Adolescence is such a critical developmental period because the life goals and behaviours that individuals adopt have long-term consequences for their well-being. In studies of American adolescents, researchers have found that prioritizing extrinsic over intrinsic life goals is associated with risky health behaviours, such as tobacco and alcohol use (Williams et al. 2000) and prospectively associated with DSM-III-R Axis I and Axis II mental disorders (Cohen and Cohen 1996). Despite their association with decreased well-being, youth may be particularly drawn to extrinsic life goals, such as image and wealth, because they are promoted by popular culture and accepted by their peers. Media outlets increasingly target adolescents as their audience (Brown and Witherspoon 2002) and with increasing globalization, children all over the world are exposed to the commercial interests of multinational corporations (Kanner 2005). A pivotal point in the development of life goals occurs among adolescents because they are finding their direction in life and forming an identity, choices that have implications for their health and well-being.

Life Goals and Parental Autonomy-Support

Given that life goals are related to mental and physical health, it is vital to understand their development. Besides peer and media influences, an important factor is the socialization of young people by their parents (Grusec and Goodnow 1994). Autonomy-support, a practice whereby parents encourage a child's initiative, offer choices, respond

to a child's needs, provide a rationale for rules, and acknowledge a child's perspective, has been linked to several positive outcomes (Joussemet et al. 2008). Through longitudinal and cross-sectional studies of North-American samples, researchers have demonstrated that parental autonomy-support is associated with children's enhanced academic and social adjustment (Joussemet et al. 2005), school achievement (Grolnick and Ryan 1989), and smoother school transitions (Ratelle et al. 2004, 2005). Parental autonomy-support is therefore an important factor in the socialization and development of children and adolescents.

Important to the present investigation, researchers have also examined the effect of parental autonomy-support in China. In a 6-month longitudinal study, parental autonomy-support predicted increased emotional well-being and academic functioning among both Chinese and American seventh-graders, with stronger effects for the United States sample (Wang et al. 2007). Similarly, a composite scale of parental autonomy-support versus psychological control predicted well-being and autonomous motivation for studying among Chinese students (Vansteenkiste et al. 2005). These studies demonstrate the relevance of parental autonomy-support in China, where it has beneficial effects for young peoples' well-being and academic success.

Although parental autonomy-support has been linked to emotional and academic functioning among Chinese youth, researchers have not examined its relationship to the life goals of Chinese adolescents. Investigators in the United States have demonstrated that 18 year-olds whose mothers are less autonomy-supportive and more controlling (by both adolescent and mother self-report) are more likely to endorse financial success as a life goal (Kasser et al. 1995). Similarly, American high school students who rate their parenting environments as less autonomy-supportive are less likely to endorse intrinsic life goals such as meaningful relationships and personal growth relative to extrinsic life goals for financial success, fame, and attractiveness (Williams et al. 2000). Researchers have further shown that controlling parenting, often viewed as the opposite of autonomy-support, is linked to greater extrinsic life goals (Cohen and Cohen 1996) and fewer intrinsic life goals (Kasser et al. 2002). Thus within North American samples, parenting that is more autonomy-supportive and less controlling is associated with adolescents' striving for intrinsic over extrinsic life goals yet researchers have not investigated whether this relationship also holds in other societies, such as China.

Hypotheses

Based on self-determination theory and previous research findings, we have three main hypotheses. First, we expect

to replicate previous findings that have linked types of life goals and well-being and extend them to a cross-cultural sample of adolescents. We predict that valuing intrinsic life goals will be associated with greater well-being, while prioritizing extrinsic life goals will be related to lower well-being among adolescents across two different societies. Secondly, we will extend research on the development of life goals to a cross-cultural sample. Studies in the US have shown that parental autonomy-support is related to the types of life goals that adolescents develop and studies in China have indicated some positive outcomes arising from autonomy-supportive parenting. We expect that parenting practices that support a child's autonomy will be related to greater endorsement of intrinsic life goals and less emphasis on extrinsic life goals in both China and North America. Finally, according to self-determination theory, societies may vary in the extent to which they value certain life goals, but the way that these goals impact on well-being will be similar because they are based in the satisfaction of universal psychological needs. We therefore expect that the pattern of relationships between parental autonomy-support, life goals, and well-being will be similar in North America and China.

Method

Participants

The North American sample was made up of 567 adolescents in Canada and the United States. In Canada, two French-speaking private high schools in Montreal, Quebec were recruited to participate in the study. Public schools could not be recruited due to a strike at the time of our data collection. There were a total of 248 students from Canada: 44 12 year-olds, 53 13 year-olds, 47 14 year-olds, 55 15 year-olds, 41 16 year-olds, and 8 17 year-olds. In the United States, two Californian schools were recruited, a junior high school in Menlo Park and a senior high school in Palo Alto. There were a total of 319 students from the US: 28 12 year-olds, 56 13 year-olds, 108 14 year-olds, 76 15 year-olds, 40 16 year-olds, and 11 17 year-olds. The mean age of the North American samples was 14.17. In China, three high schools were recruited by a colleague at the Medical College of Ningxia, who also served as a translator for the project. The schools are located in Yinchuan, the capital of Ningxia. There were a total of 515 students from China: 4 12 year-olds, 71 13 year-olds, 73 14 year-olds, 48 15 year-olds, 153 16 year-olds, and 156 17 year-olds. The mean age of the Chinese sample was 15.50. There was a good balance of male and female students in all three countries: In Canada, 121 girls and 127 boys; in the US, 153 girls and 166 boys; and in China, 289

girls and 226 boys. The Chinese sample was 56% female and the North American samples were 52% male.

All North American participants were asked to indicate which language they spoke at home. Ninety-six percent of the Canadian participants indicated French. Seventy-eight percent of the US participants indicated that they spoke English at home. The most common other languages were Spanish, Mandarin, and German. Ninety-eight percent of Chinese participants indicated that they spoke Mandarin at home. Chinese participants were also asked to provide their ethnicity and 97% indicated Han. Unfortunately we did not have exact information about the ethnicity or racial background of the North American sample although we estimate that over 95% of the Canadian sample and over 70% of the US sample was Caucasian.

Procedures

Once the schools were recruited, the purpose and procedures for the study were explained to the principals at each school. After their questions were answered, the principals signed a consent form for their schools to participate. In the US and Canada, the principals chose a range of classes to participate in the study. In China, the study collaborator chose classes that were at comparable levels to those that had been selected in North America. School visits were scheduled and questionnaires were completed during class time. Students participated voluntarily and confidentially. Researchers distributed the questionnaires, described the study, explained the scientific process, and assured participants that their answers were confidential. Students were provided 40 min to respond to the questions and over 90% of students completed the questionnaires.

All questionnaires were originally in English. For the collection of data in Canada, questionnaires were translated into Quebecois-French by a study researcher. A researcher independent to the study then verified the translation. For the collection of data in China, a bilingual master's student in Montreal translated the original English questionnaires into Mandarin and the Chinese study collaborator verified the translation. To ensure that the measures were meaningful in Yinchuan, China, the Chinese collaborator made changes to the questionnaires based on the regional dialect.

Measures

Autonomy-Support

The Perception of Autonomy Support Scale (Robbins 1994), a 9-item scale, was used to measure the degree to which adolescents report that their autonomy is supported by their parents. The participant rates on a scale of 1 (not at all true) to 5 (very much true) the extent to which each

statement applies to them. For example, “my parents listen to my opinion or perspective when I’ve got a problem,” “my parents aren’t very sensitive to my needs (reverse item)”. To obtain the overall score, a mean of the 9 items is calculated, and a higher score indicates a greater perception that the child’s autonomy is supported by the parent.

The internal reliabilities for the measure of parental autonomy-support was quite high in the North American samples, α 's > .85, but it was only modest for the Chinese sample, $\alpha = .60$. An examination of the item-total scale correlations in the Chinese sample revealed two items that, unexpectedly, had significant negative loading—“My parents try to tell me how to run my life (reversed)” and “My parents help me to choose my own direction.” Because of the apparent problem in translating these items into Chinese, we reduced the autonomy-support scale to the remaining seven items. The seven-item scale had a reliability of .79 in the Chinese sample, and .88 and .85 in the US and Canadian samples respectively.

Intrinsic and Extrinsic Life Goals

The Life Aspiration Index (Kasser and Ryan 1996) was used to measure participants’ intrinsic and extrinsic life goals. Participants were asked to rate the importance of 14 long-term life goals or aspirations on a scale of 1 (not at all) to 5 (very much). Intrinsic goals included: “to have committed, intimate relationships”; “to work for the betterment of society”; and “to grow and learn new things”. Extrinsic goals included: “to have your name appear frequently in the media”; “to have enough money to buy everything you want”; and “to have an image that others find appealing”. Acceptable internal reliabilities of $\alpha > .75$ were obtained in the North American and Chinese samples.

Well-Being

Well-being was measured through positive and negative affect and self-concept. On the Positive and Negative Affect Scale (Emmons 1992), respondents indicated the extent to which they felt a series of emotions over the past 4 days: four positive feelings (joyful, enjoyment/fun, pleased, happy) and six negative feelings (unhappy, worried/anxious, depressed, angry/hostile, frustrated, stressed) from 1 (slightly or not at all) to 5 (extremely). Means for positive and negative affect were calculated separately and then standardized. Positive affect and negative affect were highly negatively related, $r = -.36$. An index of affect used in the analyses was calculated by subtracting standardized negative affect from standardized positive affect.

On Anderman’s (2002) self-concept scale, respondents rated the extent to which they agreed or disagreed with six statements about themselves (“I have a lot to be proud of,”

“I like myself just the way I am,” “I feel loved and wanted,” “I feel socially accepted,” “I feel like I am doing most things right,” “I have a lot of good qualities.”). Statements were rated on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). To obtain a global score, the mean of the six items was calculated.

Acceptable internal reliabilities of $\alpha > .75$ were obtained in the North American and Chinese samples for the measures of self-concept, positive affect, and negative affect. A global index of well-being was calculated as the mean of the standardized scores for positive and negative affect valence and self-concept. The creation of a global index was used because of the high positive correlation between affect and self concept ($r = .47$), and because our predictions were framed in terms of general well-being.

Results

Preliminary Analyses

A $2 \times 2 \times 3$ Multiple Analysis of Variance was performed with gender, age, and country as between subject variables and parental autonomy-support, intrinsic life goals, extrinsic life goals, and global well-being as the dependent variables. This analysis revealed significant effects for country on all four measures: autonomy-support, $F(2, 1,015) = 29.21$, $p < .001$; intrinsic life goals, $F(2, 1,015) = 4.06$, $p < .05$; extrinsic life goals, $F(2, 1,015) = 5.67$, $p < .01$; and well being, $F(2, 1,015) = 31.50$, $p < .001$. Table 1 presents the means and standard deviations for participants in the three countries. Consistent with previous research, the US and Canadian samples scored higher than the Chinese sample on autonomy support (Chirkov and Ryan 2001), intrinsic life goals (Kim et al. 2003), and well-being (Markus and Kitayama 1991). Canadian and US youth did not differ significantly from each other on any of these three variables. A different pattern emerged for extrinsic life goals, however, with the Canadian sample scoring significantly lower than the US and Chinese samples, which did not differ from each other.

The MANOVA also revealed significant gender effects for intrinsic life goals, $F(1, 1,015) = 4.40$, $p < .05$, and for well being, $F(1, 1,015) = 7.33$, $p < .001$. Consistent with

previous research, females reported greater intrinsic life goals (Kasser and Ryan 1993) and lower well-being (Kim et al. 2003) compared to males. There were no other significant effects involving gender or age and there were no significant interaction effects.

Because the US and Canadian samples were quite similar on the majority of measures, we combine these two samples (labelled henceforth “North American”) for all subsequent analyses. The correlations among the four variables in our study were also highly similar between the US and Canadian samples. Specifically, the following correlations were obtained for the US and Canadian samples respectively: autonomy-support and intrinsic goals, r 's = .20 and .17; autonomy-support and extrinsic goals, r 's = $-.20$ and $-.11$; autonomy-support and well-being, r 's = .37 and .43; intrinsic and extrinsic goals, r 's = .22 and .13; intrinsic goals and well-being, r 's = .23 and .16; extrinsic goals and well-being, r 's = $-.05$ and .00. None of the differences in these correlations between the two samples approached significance (p 's $> .20$).

Table 2 presents the correlations among the variables separately by society. The correlations above the diagonal are those obtained in the Chinese sample and those below the diagonal are those obtained for the North American sample. It can be seen that parental autonomy-support was significantly associated with intrinsic life goals and well-being, and that this was equally true for Chinese and North American adolescents. Table 2 also shows that intrinsic life goals were significantly positively associated with well-being and that this was equally true for Chinese and North American adolescents.

Extrinsic goals were unrelated to well-being among both North American and Chinese youth, and their relation to other variables appeared to vary somewhat by society. Although extrinsic life goals were negatively related to parental autonomy-support in both societies, this relation was significant only for North American participants. Notably, the correlation between extrinsic life goals and intrinsic life goals was different in the Chinese ($r = .52$) and North American samples ($r = .21$). In the subsequent analyses, we control for the covariance between intrinsic and extrinsic life goals.

Main Analyses

The central goals of the present study were (1) to examine the relationship between type of life goals (intrinsic versus extrinsic) and well-being and (2) to assess the association of parental autonomy-support and life goals among adolescent samples in North America and China. To this end, we tested a model whereby parental autonomy-support would be related to life goals, which in turn would be associated with well-being. It was expected that life goals

Table 1 Means and standard deviations (in parentheses) for study variables in the three countries

	China	US	Canada
Parental autonomy-support	2.84 (0.65)	3.22 (0.86)	3.28 (0.79)
Intrinsic life goals	3.96 (0.69)	4.20 (0.65)	4.07 (0.60)
Extrinsic life goals	3.33 (0.87)	3.32 (0.84)	2.95 (0.91)
Well-being	3.27 (0.57)	3.74 (0.66)	3.83 (0.60)

Table 2 Correlations among variables for Chinese and north American adolescents

	Autonomy support	Intrinsic life goals	Extrinsic life goals	Well-being
Autonomy support	–	.13**	–.04	.36***
Intrinsic life goals	.18***	–	.52***	.26***
Extrinsic life goals	–.16***	.21***	–	.13**
Well-being	.43***	.19***	–.05	–

Correlations above the diagonal are for the Chinese sample and correlations below the diagonal are for the North American sample

*** $p < .001$; ** $p < .01$

would act as a mediator between autonomy-support and well-being. We expected the relationships to hold in both societies after controlling for gender and age. To examine this model, a structural equation model was conducted in LISREL 8 (Jöreskog and Sörbom 2003) with Robust Maximum Likelihood as the method of estimation. Observed variables were computed using random item parceling for each construct (Bandalos 2002). Autonomy-support, age, and gender were modelled as exogenous variables, while intrinsic and extrinsic life goals and well-being were endogenous variables. In addition, paths were drawn from age and gender to all endogenous variables to control for their effect and the covariance between intrinsic and extrinsic life goals was freely estimated.

Testing this model revealed adequate fit indices in the North American, Satorra–Bentler χ^2 ($df = 51, n = 567$) = 128.87, $p < .001$, NC = 2.53, NFI = .96, CFI = .98, RMSEA = .052 [.041; .063], GFI = .96, SRMR = .047, as well as in the Chinese sample, Satorra–Bentler χ^2 ($df = 51, n = 515$) = 155.29, $p < .001$, NC = 3.04, NFI = .91, CFI = .94, RMSEA = .063 [.052; .075], GFI = .95, SRMR = .054. Adequate factor loadings were also obtained for each construct, except for one indicator of well-being in the Chinese sample—negative emotions—which was below .40. However, the other indicators of well-being were high in this sample, thus indicating sufficient variance for this construct in the Chinese sample. Figure 1 shows the results of the model for each sample. As expected, in both the North American and Chinese samples, parental autonomy-support was positively associated with intrinsic life goals, which were in turn positively associated with well-being. In the North American sample, autonomy-support was negatively related to extrinsic life goals, which were unrelated to well-being, whereas in the Chinese sample autonomy-support was unrelated to extrinsic life goals and not significantly associated to well-being. Our hypotheses were thus supported in terms of intrinsic, but not extrinsic life goals.

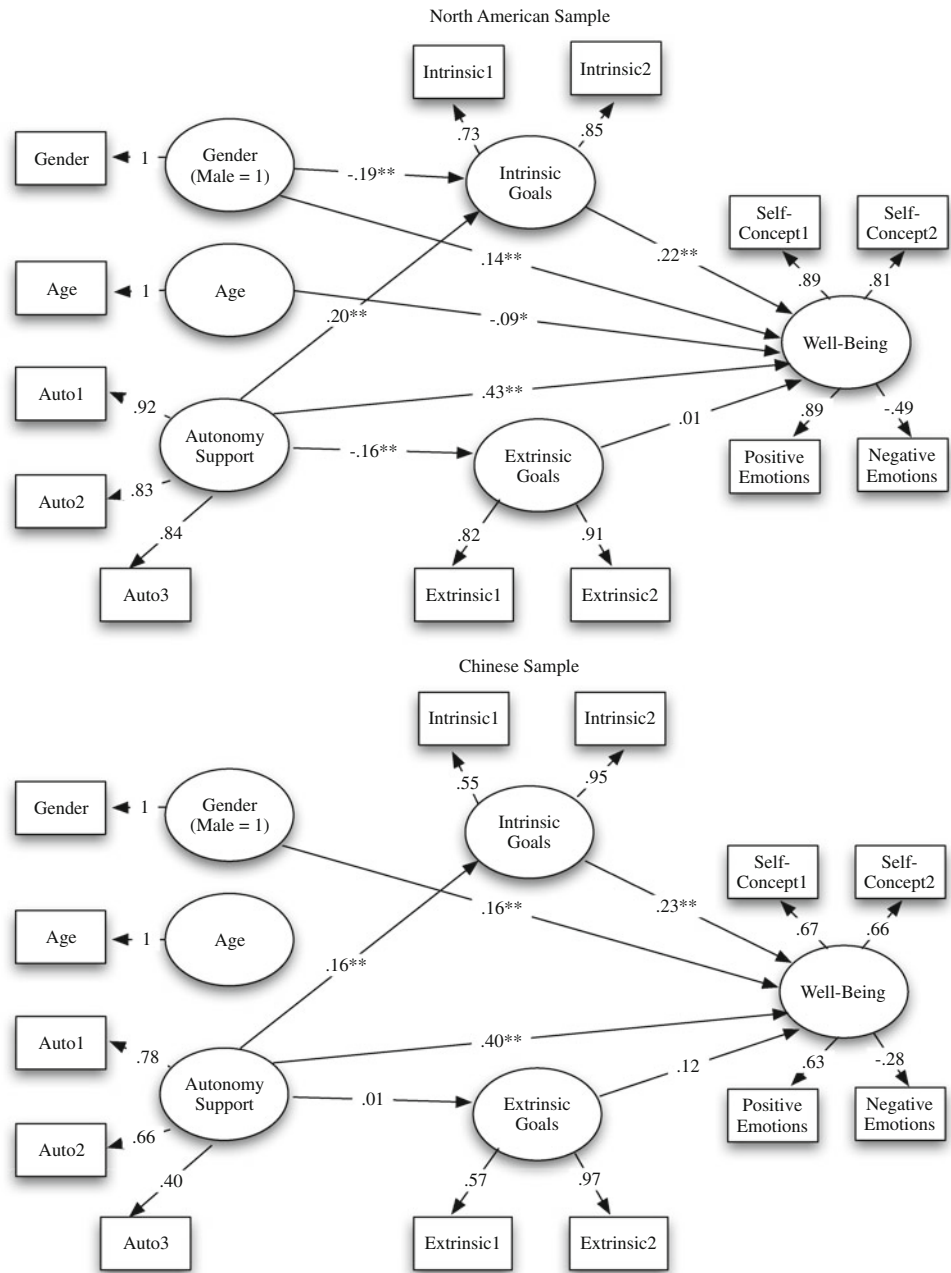
In sum, the model in which parental autonomy-support was linked to intrinsic life goals which were in turn related to well-being appeared to hold in both the North American and Chinese samples. In addition, in both

samples, there was a significant direct path between autonomy-support and well-being. Sobel tests and bias-corrected bootstrapped estimates indicated that there was a significant indirect effect from autonomy-support to well-being in both the North American ($z = 2.50, p < .05, [.033; .159]$) and the Chinese samples ($z = 2.00, p < .05, [.026; .102]$), thus suggesting partial mediation of intrinsic life goals between autonomy-support and well-being.

Alternative models were then tested to evaluate the adequacy of the hypothesized model. Because partial mediation was hypothesized, all variables are predicted by all other variables (e.g., each modelled variable has a direct path from all the other variables included in the model) and thus, all possible alternative models (e.g., autonomy-support \rightarrow well-being \rightarrow life goals) become equivalent models with equal fit indices. Therefore, we examined if alternative models including full mediation (no direct effect) would better fit the data than our hypothesized partial mediation model (i.e., autonomy-support \rightarrow well-being \rightarrow life goals, with no direct path from autonomy support to life goals). Compared to the hypothesized model, the AIC values of all possible alternative non-hierarchical models were higher than the hypothesized model. Therefore, the hypothesized model—with the lowest AIC value—should be preferred (Kline 2005).

In line with recent methods to test moderation in structural equation modelling with a natural categorical variable (e.g., Rigdon et al. 1998) the two models (North American and Chinese) were compared with each other for differences in their path coefficients. When all paths were freely estimated, the baseline model was χ^2 ($df = 102, n = 1,082$) = 284.17. All path coefficients were thus constrained to equal those of the other sample. The fit for this model was ($df = 113, n = 1,082$) = 326.49. The difference between the baseline and this constrained model was significant, $\Delta\chi^2 = 42.32(11), p < .01$, suggesting that all paths were not equal across samples. Each path was examined separately with an equality constraint across samples. Table 3 shows the resulting $\Delta\chi^2$ between the baseline model and the model with each specific path constrained to be equal across the two samples. Results revealed that the path from

Fig. 1 Structural equation models for autonomy-support, life goals, and well-being, controlling for age and gender, for the North American and Chinese Samples. Non-significant paths from the controlled variables have been deleted for clarity



autonomy support to extrinsic life goals and the path from gender to intrinsic life goals differed across samples. These results thus suggest moderation by society in the relationship between parental autonomy-support and extrinsic life goals in such a way that among North American adolescents, parental autonomy-support is negatively associated with extrinsic life goals, whereas in Chinese adolescents, parental autonomy-support is unrelated to extrinsic life goals. In addition, female North American adolescents tended to have higher intrinsic life goals compared to males, whereas there was no gender difference with respect to intrinsic life goals in Chinese adolescents.

Discussion

The present study was designed to examine intrinsic and extrinsic life goals at a key, but understudied, developmental stage. Adolescence, a period when individuals adopt new social roles and develop personal goals, provides an opportunity to examine life goals as they are developing. In North America, as adolescents move into adulthood, they increasingly tend to favor extrinsic over intrinsic goals and values (Myers 2000; Pew Research Center 2007). This is not surprising given that the media and advertising companies target young people as their

Table 3 Chi-square difference between the baseline model and the equality constrained model for each specific path

	Standardized path North America	Standardized path China	$\Delta\chi^2(1)$
Age → intrinsic	.00	.03	.32
Age → extrinsic	.01	.09	.89
Age → well-being	-.09*	.02	3.83
Gender → intrinsic	-.19**	.02	13.38**
Gender → extrinsic	.03	-.06	1.12
Gender → well-being	.14**	.16**	1.23
Autonomy-support → intrinsic	.20**	.14**	.04
Autonomy-support → extrinsic	-.16*	.01	4.44*
Autonomy-support → well-being	.43**	.40**	2.81
Intrinsic → well-being	.22**	.23**	.70
Extrinsic → well-being	.01	.12	1.12

Adjustment for the scaling factor of the Santorra–Bentler chi-squares was negligible and virtually did not affect the present results

* $p < .05$, ** $p < .01$

audience (Brown and Witherspoon 2002). As nations such as China open up to multinational corporations, young people all over the world are exposed to their advertisements (Kanner 2005). Given these influences, it is important to understand the development of life goals among adolescents from different cultures and how they relate to their psychological growth and well-being. Yet researchers in this area have primarily studied adult populations and studies examining the influence of parental autonomy-support on whether young people prioritize intrinsic or extrinsic life goals have been conducted mainly in the United States. The present study extends previous work by examining life goals, parenting practices, and well-being in a large sample of Chinese and North American adolescents.

Using a framework from self-determination theory that distinguishes types of life goals based on how well they satisfy psychological needs, we examined adolescents' intrinsic and extrinsic life goals. While extrinsic life goals tend to be pursued as a means to an end, intrinsic life goals are pursued as an expression of inherent growth tendencies (Kasser and Ryan 1996). Self-determination theory has further identified autonomy-support as a parenting practice that leads to children's optimal functioning. Replicating previous research, we found that although there were cultural differences in the ratings of parental autonomy-support and life goals, the pattern of relationships among these variables was similar across two societies. Thus, autonomy-support was associated with greater endorsement of intrinsic life goals, which in turn was associated with enhanced well-being in both North America and China.

The societal differences that we found in adolescents' ratings of parental autonomy-support, life goals, and well-being are congruent with previous researchers' findings. As shown in a study of South Korean and US college students (Kim et al. 2003), the North American youth in our sample rated their intrinsic life goals and their well-being higher than the Chinese youth. The North American adolescents

also perceived their parents as being more autonomy-supportive than the Chinese adolescents. Previously, researchers have shown that youth in the United States tend to rate their parents as more autonomy-supportive compared to youth in Russia who perceive their parents as more controlling (Chirkov and Ryan 2001). Yet for both American and Russian youth, perceived autonomy-support predicted greater academic motivation and well-being, highlighting the importance of the need for autonomy across societies. Similarly, Asian parents tend to be more controlling and less autonomy-supportive than American parents (Chao and Tseng 2002). However, qualitative research has shown that Chinese mothers preferred to guide their children rather than impose absolute control, using autonomy-supportive techniques such as providing a rationale for their requests (Chao 1995) and correlational studies have revealed that autonomy-supportive parenting predicted more adaptive learning and greater well-being among Chinese college students (Vansteenkiste et al. 2005). Although they perceive their parents as less autonomy-supportive than North American students, autonomy-support is a relevant parenting practice for Chinese youth.

We used structural equation modelling to examine the link between parental autonomy-support and the endorsement of intrinsic and extrinsic life goals and how these goals in turn relate to well-being. As hypothesized, parental autonomy-support related positively to the endorsement of intrinsic life goals in both China and North America. If adolescents perceived their parents as taking their perspective, guiding them to make their own choices, and expressing sensitivity to their needs, they were more likely to strive for intrinsic life goals, such as working for the betterment of society, learning new things, and having committed relationships. This supports the findings of previous researchers that autonomy-supportive parental environments are related to American adolescents having stronger intrinsic relative to extrinsic life goals (Williams

et al. 2000) and extends their findings to a cross-cultural sample. It further supports the findings that parental autonomy-support has been linked to a number of positive outcomes such as academic functioning and well-being in North America (Joussemet et al. 2005) and in China (Wang et al. 2007). Although we found similar relationships in China and North America, it may be that when examined longitudinally, the association between parental autonomy-support and intrinsic life goals becomes stronger for North American adolescents than Chinese youth. Using a longitudinal design, researchers found that while autonomy-support is beneficial in both the US and China, over time the benefits of autonomy-support on children's functioning are stronger in the US (Wang et al. 2007). Nonetheless, our research suggests that parental autonomy-support can be linked to intrinsic life goal striving among high school students in two very different societies.

We further found that parental autonomy-support was negatively associated with the endorsement of extrinsic life goals in North America. The more that North American adolescents perceived their parents as autonomy-supportive, the less likely they were to endorse life goals for financial success, fame, and appearance. This finding is in line with previous research on American adolescents (Cohen and Cohen 1996; Williams et al. 2000) and suggests that parenting in which adolescents feel supported and guided to make choices encourages them to place less importance on extrinsic life goals that depend on the contingent reaction of others. However, we did not find the expected relationship between parental autonomy-support and extrinsic life goals in China. In fact, although not statistically significant, parental autonomy-support and extrinsic life goals approached a positive relationship. It is possible that the extrinsic life goals have a different meaning in Chinese society. Previous researchers examining the life goals of undergraduate students found that across 15 countries, intrinsic and extrinsic life goals opposed each other, but that in poorer countries extrinsic goals grouped more with safety goals than in wealthier countries, indicating that they have different meaning for individuals in these countries (Grouzet et al. 2005). As outlined by self-determination theorists (Deci and Ryan 2000), extrinsic life goals could relate differently to autonomy-support because they relate differently to basic psychological needs in China.

Supporting our hypotheses, the SEM analysis revealed that endorsing intrinsic life goals was related to enhanced well-being in both North America and China. This finding is congruent with previous work demonstrating that focusing on intrinsic relative to extrinsic life goals is associated with greater well-being: increased vitality and self-actualization, and decreased depression, anxiety, and physical ailments (Kasser and Ryan 1993, 1996; Kim et al. 2003; Schmuck et al. 2000). It further supports previous

research on altruism, in which helping others predicted mental health (Schwartz et al. 2003). We have thus added to the growing body of research demonstrating that some life goals are more beneficial to individuals' well-being than others. Importantly, we found the same pattern of results in China and North America, suggesting that the relationship between intrinsic life goals and enhanced well-being holds true in very different societies. According to self-determination theory, valuing and pursuing intrinsic life goals is related to psychological well-being because intrinsic life goals are positively associated with, and, in fact, mediated by the satisfaction of basic psychological needs for autonomy, competence, and relatedness (Kasser 2002b; Niemiec et al. 2009).

Extrinsic life goals are thought to undermine well-being by distracting individuals from satisfying their needs for autonomy, competence and relatedness, instead focusing on contingent approval and external signs of self-worth. Our study did not, however, find the expected relationship between endorsing extrinsic life goals and lower well-being in either society. Previous research has mainly been conducted with adult populations. It is possible that the negative relationship between extrinsic life goals and well-being develops beyond adolescence. Researchers have shown that adolescents' endorsement of extrinsic life goals predicts engagement in risky health behaviours such as tobacco and alcohol use (Williams et al. 2000), suggesting that later on it could also lead to lower psychological well-being. It may also be that intrinsic life goals are more important to well-being while extrinsic life goals impact ill-being, such as anxiety and physical ailments. In a recent study of college graduates, researchers found that the attainment of intrinsic goals was related to well-being, while attaining extrinsic life goals was not related to lower well-being, but was related to ill-being (Niemiec et al. 2009). Future studies are needed to understand whether extrinsic life goals are linked to ill-being and whether negative effects emerge later in development for some adolescents.

Societal factors moderated the relationships between parental autonomy-support, life goals, and well-being in two ways. As described above, parental autonomy-support was negatively related to extrinsic life goals in North America, but not in China. In addition, as shown in previous studies, females compared to males tended to have higher intrinsic life goals in North America, but there was no gender difference in China. Despite these societal differences, we found a similar pattern of relationships between parental autonomy-support and intrinsic life goals, and between intrinsic life goals and well-being in North America and China. Congruent with previous research (e.g., Joussemet et al. 2005; Wang et al. 2007), we also found a positive relationship between parental autonomy-support and well-being in both North America and China.

The SEM further showed evidence that the endorsement of intrinsic life goals partially mediated the relationship between parental autonomy-support and well-being. These results suggest that parenting is an important factor in allowing young people to develop life goals that are congruent with their inherent interests and that satisfy their basic psychological needs. It seems that the development of intrinsic life goals, such as intimate relationships, personal growth, and community involvement, at a time when young people are discovering their identity and place in the world allows individuals to experience greater well-being.

Limitations and Directions for Future Research

The present study was limited in several ways. First, the relationships between parental autonomy-support, life goals, and well-being were examined in a cross-sectional design and we cannot make causal conclusions on the direction of the relationships. Although part of the model is well supported by previous research—the links between autonomy-support and better adjustment and intrinsic life goals and well-being—it is possible that greater well-being is driving greater endorsement of intrinsic life goals and perceptions of parental autonomy-support. Through longitudinal studies, researchers have demonstrated the beneficial effects of intrinsic life goals on well-being (Niemic et al. 2009) as well as the beneficial effects of parental autonomy-support on children's adjustment (Joussemet et al. 2005). Similarly, longitudinal studies would allow researchers to test the impact of parenting practices on the development of life goals. Furthermore, experimental studies in which researchers implement an intervention to increase participants' intrinsic life goals are important for developing causal models on the development of life goals and their relationship to well-being. Second, all of our measures were self-report. Future research should include parental report of child-rearing practices and other informants, such as health professionals, to assess adolescents' well-being.

Finally, we used only one measure of parenting and one measure of life goals. Future research would benefit from the use of more diverse measures to examine parenting practices and life goals. Importantly, the present study provides evidence for a universal relationship between parental autonomy-support and endorsing intrinsic life goals. However, this dimension of parenting may reflect North American values more than Chinese parenting goals. Researchers have called for the inclusion of parenting constructs that have greater value in China, such as interpersonal connectedness and the practice of shaming as a discipline technique (Chao and Tseng 2002; Wang et al. 2007). Future longitudinal studies would also benefit from supplementing measures of life goal importance with life goal attainment. Recently researchers conducted a longitudinal study of college

graduates and found that the attainment of intrinsic goals related to psychological health whereas the attainment of extrinsic life goals related to ill-being (Niemic et al. 2009). Following this work, future studies should include measures of ill-being and address the impact of attaining different life goals as adolescents move into adulthood. Studies measuring the attainability of life goals and their relationship to traditional values are also important in countries, such as China, undergoing globalization. In a recent study, researchers examined adolescent suicide risk factors in China and found evidence for strains in their lives, such as conflicting values (for e.g., traditional vs. modern and Chinese vs. western) and a discrepancy between aspirations and reality (such as striving for financial success from an unprivileged social status) (Zhang et al. 2009). Clearly, there is a need for more studies examining the emergence and impacts of life goals among adolescents.

Conclusion

Using a large sample of adolescents in three countries, the present study examined how a parenting style, autonomy-support, relates to life goals and how life goals in turn relate to well-being. Across Chinese and North American samples of adolescents, a similar pattern of results emerged. When young people tended to perceive their parents as more autonomy-supportive, they endorsed intrinsic life goals to a greater extent, and when they endorsed more intrinsic life goals, they tended to experience greater well-being. These findings support self-determination theory's proposition that prioritizing intrinsic life goals is beneficial across different societies and that autonomy-supportive parenting fosters the development of intrinsic life goals. They also support researchers' calls for parenting workshops to teach autonomy-supportive practices (Joussemet et al. 2008) and interventions to help young people focus on intrinsic goals (Vansteenkiste et al. 2006). Through their parents' support of their needs and through striving to better their community, develop close relationships, and accept themselves, adolescents may experience greater psychological health and well-being at a pivotal time in their development. In addition to laying the groundwork for future longitudinal and experimental studies on the development of life goals in different societies, these results have important implications for helping adolescents to select intrinsic goals to direct their lives and promote their well-being.

Acknowledgments This study was funded by grants from the Fonds Québécois de Recherche sur la Société et la Culture, Quebec (FQRSC), and the Social Science and Humanities Research Council of Canada (SSHRC).

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