

# Self-Growth in the College Years: Increased Importance of Intrinsic Values Predicts Resolution of Identity and Intimacy Stages

Social Psychological and  
Personality Science  
2014, Vol. 5(6) 705-712  
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sagepub.com/journalsPermissions.nav  
DOI: 10.1177/1948550613516875  
spps.sagepub.com



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## Abstract

Could a shift in values over time drive resolution of identity and intimacy in young adulthood? In the present study, we found support for our hypothesis that increased prioritization of intrinsic values over an academic year predicts university students' resolution of the Eriksonian stages of identity and intimacy, and that stage resolution would mediate the relationship between value change and enhanced well-being. Among the 196 students followed from September to April, we found that increased prioritization of intrinsic relative to extrinsic values over the year related to greater resolution of both identity and intimacy, controlling for stage resolution at T1, and that increased resolution positively predicted enhanced subjective well-being and psychological well-being over time.

## Keywords

human motivation, self-determination theory, subjective well-being, life values

He allowed himself to be swayed by his conviction that human beings are not born once and for all on the day their mothers give birth to them, but that life obliges them over and over again to give birth to themselves.

- Gabriel García Márquez, *Love in the Time of Cholera* (1988, p. 165)

It takes so much longer than I thought it would take to figure out who you are

- Pete Holmes, comedian (2013)

University is a transformative time for young adults, both inside and outside the classroom. Competence, self-knowledge, friendships, and relationships both flourish and face challenges in new and changing environments. For many university students, the start of college is the first extended period of time living outside of the family home, away from a more homogeneous place of origin, and into a context where new cultures are encountered (e.g. from the culture of the loud fraternity house next door, to that of the biology department, and to that of your international roommate in residence) and new freedom to make choices concerning lifestyle, religious practice, hobbies, habits, eating rituals, and social circles is available.

Values serve as an important guide for personal choices in behavior, short-term, and long-term goals. For example, a student who highly values their close relationships may volitionally turn down a lucrative summer internship to look after an

ailing family member. In the present article, we aimed to test the hypothesis that personal values, specifically, intrinsic values, play an important role in the development of identity and intimacy potentialities (e.g. Erikson, 1982). In turn, we also predicted that increased identity resolution across the academic year mediates the relationship between a change in value priorities and subjective well-being (SWB) among students.

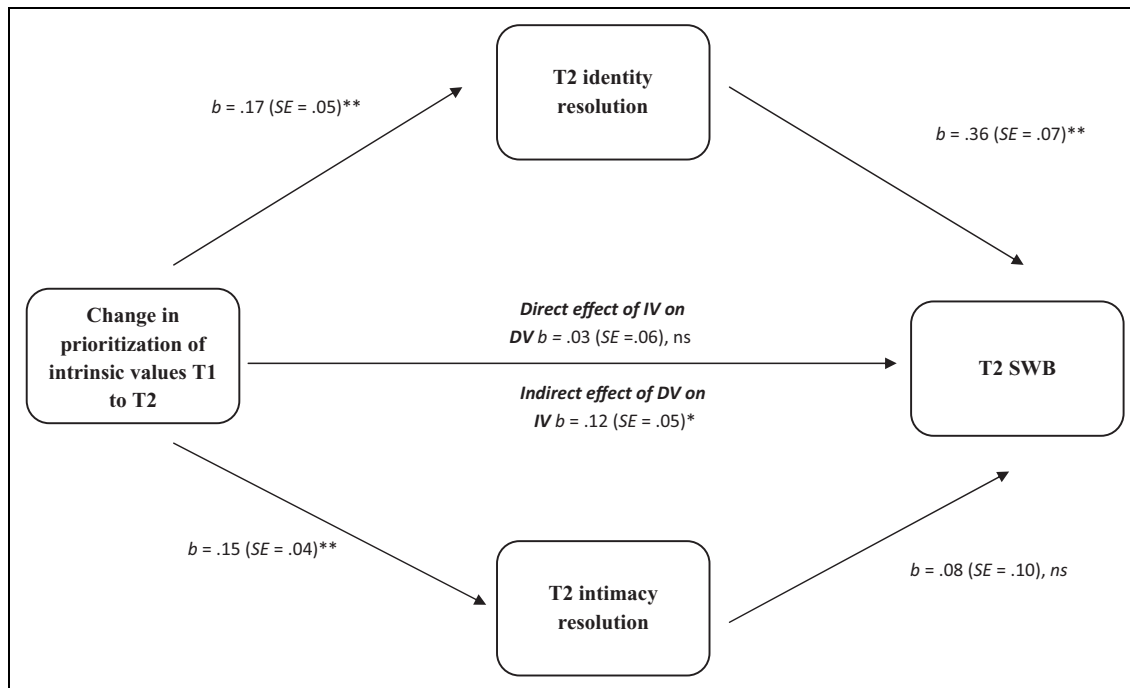
## *Psychosocial Development Across the Life Span*

Erik Erikson (1959) ushered in an important shift in perspective for the study of human development. While developmental psychology traditionally restricted empirical and theoretical inquiry to the stage of childhood and early adolescence, Erikson viewed development as a never-ending process of growth and change throughout life. Erikson proposed eight psychosocial stages across the life span, at each of which a different "crisis" is met, grappled with, and if successfully solved produces a new set of competencies. Unfolding from infancy to old

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**Figure 1.** Controlling for baseline SWB, identity resolution, and intimacy resolution, the association between change in intrinsic values prioritization and T2 SWB is mediated by identity resolution.

age, Erikson's eight stages are (1) basic trust versus mistrust, (2) autonomy versus shame, (3) initiative versus guilt, (4) industry versus inferiority, (5) identity versus role confusion, (6) intimacy versus isolation, (7) generativity versus stagnation, and (8) integrity versus despair.

Of particular interest to researchers studying young adults and university students are the fifth and sixth stages, concerning resolution of the identity and intimacy crises. The fifth stage, identity versus role confusion, is concerned with intense exploration and the establishment of a sense of "who I am" and "where I fit into the world." While Erikson viewed identity versus role confusion as a task of adolescence, the establishment of a clear identity is increasingly prolonged in 21st-century Western society, with young people attending school for longer, entering careers and settling down later (e.g. Arnett, 2000). The sixth stage, intimacy versus isolation is concerned with facing possibilities of rejection, and opening up to others to form deep, committed, confessional, mutually caring relationships with romantic partners and close friends.

Of interest to the present study is a novel idea presented in Erikson's theory of stage development, proposing that an individual's journey through periods of uncertainty and doubt, resulting in altered views on the world and the self, could be a psychologically adaptive experience at each stage. In Erikson's words, "Each successive step . . . is a potential crisis because of a radical *change in perspective*" (1959, p. 55). In the present study, we are interested in empirically investigating whether a change in perspective, operationalized as a change in value prioritization across an academic year, predicts resolution of the identity and intimacy psychosocial stages.

### Self-determination Theory (SDT) and the Study of Life Values

SDT (e.g. Ryan & Deci, 2000) is an organismic theory of human motivation, which postulates three basic psychological needs of autonomy, competence, and relatedness. Exposure to environmental contexts that thwart these needs, such as children regularly subjected to an excessively controlling, authoritarian parenting style or students in an alienating business school environment, have been shown to lead to ill-being and maladaptive self-regulation. Conversely, need-supportive contexts are thought to lead to psychological growth, well-being, and more adaptive forms of self-regulation. Empirical evidence has supported the universality of these three needs, with basic psychological need satisfaction predicting well-being and adaptive outcomes in cross-cultural samples (e.g. Chirkov; Ryan, & Willness, 2005), and a variety of domains (e.g., Milyavskaya & Koestner, 2011), from athletics (e.g. Reinboth, Duda, & Ntoumanis, 2004) to working life (e.g., Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010).

Of interest to the present study, researchers have investigated associations between Eriksonian identity development and well-being within an SDT framework. For example, Luyckx and colleagues (2007) found that autonomous motivation moderated the relationship between information-oriented identity style (characterized by exploration of beliefs, assumptions, and goals) and identity integration, commitment, and self-esteem. Specifically, only autonomous college students benefited from holding an information-oriented style, while for those with low levels of autonomous motivation information-

oriented style was negatively associated with identity integration. Empirical investigation has also found that adolescents' autonomous reasons for using a particular identity style were positively related to well-being, while controlled reasons for identity style were negatively related to well-being (Smits, Soenens, Vansteenkiste, Luyckx, Gossens, 2010). Additionally, autonomous and controlled reasons for identity commitment contributed additional variance to the prediction of adolescents' adjustment beyond the level of identity commitment (Soenens, Berzonsky, Dunkel, Papini, & Vansteenkiste, 2011). While these studies reveal a compelling relationship between identity development and autonomous motivation in predicting well-being, the relationship between changes in life values and psychosocial development in predicting young adults' well-being remains unexplored.

SDT researchers have identified and investigated different sociocultural values as contexts that may support or conversely thwart basic psychological need satisfaction. Values have been defined as relatively stable beliefs that "transcend objects and situations," and influence our decisions as well as long-term goals (Grube, Mayton, & Ball-Rokeach, 1994, p. 155). Within an SDT framework, Kasser and Ryan (1993) have differentiated between two forms of values, extrinsic and intrinsic values. *Intrinsic values*, such as striving personal growth, building intimate relationships, and community contribution, are those that are thought to inherently satisfy basic psychological needs. In contrast, *extrinsic values*, such as striving for wealth, popularity, and beauty, are those that are reliant on external reward (e.g. material gain, or the approval and praise of others) and do not directly satisfy basic psychological needs.

Kasser and Ryan (1993, 1996) hypothesized that individuals who prioritize intrinsic values benefit from enhanced psychological health and well-being in comparison to individuals who prioritize extrinsic values. While placing some importance on extrinsic values may not be entirely malevolent, the disproportionate pursuit of extrinsic values may detract from the fulfillment of basic psychological needs, decreasing well-being. In two initial studies on college students, Kasser and Ryan found that centrality of financial values was negatively correlated with college students' well-being and mental health. In a third study, these findings were extended to a noncollege, community sample, showing that financial values were associated with lower global adjustment, lower social productivity, and greater instances of behavioral disorders (Kasser & Ryan, 1993). The association between prioritization of intrinsic values and well-being, and extrinsic values and ill-being has been replicated in North America (e.g. Sheldon, Ryan, Deci, & Kasser, 2004), as well as extended to Russia (Ryan et al., 1999), Germany, (Schmuck, Kasser, & Ryan, 2000), Singapore (Kasser & Ahuvia, 2002), and South Korea (Kim, Kasser, & Lee, 2003).

Recently, researchers have examined the effects of changes in value priorities on well-being and mental health outcomes over time. In the first in a series of three longitudinal studies, Kasser and colleagues (2013) found that increased centrality of financial values over 12 years in an at-risk sample of

American youth was related to increased mental health problems over this time period. In other words, individuals whose value systems became increasingly oriented toward financial values from age 18 to 30, tended to have a corresponding increase in ill-being. In a second study, Kasser and colleagues replicated this pattern of results, following college seniors for 2 years into postcollege life and showing that increased importance placed on financial values over this period was related to decreased psychological need satisfaction and well-being. Finally, in a third study conducted in Iceland with over 500 community adults after the economic recession, decreased prioritization of materialistic values over a 6-month period was related to increased well-being, while increased prioritization of materialistic values was related to a corresponding decrease in well-being (Kasser et al., 2013).

Sheldon and Kasser (2001) investigated developmental changes in personal strivings and values across the life span, in a cross-sectional sample of adults between the ages of 17 and 82. Testing Eriksonian hypotheses, they found that age had a curvilinear relationship with intrinsic value prioritization, such that those older than 60 years had significantly lower scores for intrinsic values prioritization than the middle-aged individuals. Age was also significantly positively related to generativity strivings, marginally positively related to ego-integrity strivings, unrelated to intimacy strivings, and significantly negatively related to identity strivings. In another study, Sheldon (2005) found that a sample of students followed from freshman to senior year became significantly more intrinsic and less extrinsic in their values prioritization and that this transition in values was associated with increases in psychological well-being (PWB) over time.

### *Bridging Erikson With SDT-Driven Investigations on Life Values*

Although Erikson's theory of stage development is compatible with SDT's approach to investigating life values, empirical research has only begun to bridge these two theories (e.g. Sheldon & Kasser, 2001). Erikson implicated a search for values in his writing on the identity stage, proposing that both conflict and resolution of this stage arise from a personal "search . . . for . . . social values which guide identity" (1959, p. 94). Furthermore, Erikson warned against prioritizing external markers of success, stating that "a special danger ensues from the idea.[that] you are what you can buy" (p. 94). Erikson viewed the antidote to this fallacy as lying in "a system of education that transmits values and goals which determinedly aspire beyond mere 'functioning' and 'making the grade'."

In the present study, we aim to test theory-driven hypotheses merging SDT and Eriksonian theory and hope to extend contemporary research in the domains of psychosocial stage development and life values. In order to investigate the relationship between a change in values and psychosocial stage resolution, we followed a young adult sample across the academic year, from September to April, measuring intrinsic values, extrinsic values, identity resolution, intimacy resolution, and both SWB

and PWB. Regarding specific hypotheses, first, we predicted that we would replicate previous findings (e.g. Kasser et al., 2013) that an increase in intrinsic values prioritization across the academic year would be positively associated with well-being (both SWB and PWB) in April, controlling for initial well-being. Second, we predicted that an increase in intrinsic values prioritization over time would be associated with identity and intimacy resolution in April. Third, and most central to the present investigation, we predicted that identity and intimacy resolution would mediate the relationship between an increase in intrinsic values prioritization over the course of the year, and well-being at the end of the year, controlling for baseline well-being.

## Method

### Participants and Procedure

Two hundred and thirty-six (76% female) students at universities in Montreal were recruited for a study on personality factors and goal striving in September 2011. All participants were fluent in English, and between the ages of 17 and 29, with a mean age of 20.2 years. Students were informed that study participation entailed the completion of an online questionnaire in September, and a second questionnaire at the end of the school year in April. All measures were administered at both these times. Once students consented to participate and demonstrated understanding of the procedure, a research assistant distributed an online survey, using the online platform Qualtrics. A second questionnaire was distributed to participants in April, which 196 of the initial participants (83%) fully completed. In a series of independent samples *t*-tests for comparing means between the students who completed the final measures in April, and the 39 students who did not, there were no significant differences in baseline SWB, prioritization of intrinsic values, identity, and intimacy resolution. All analyses are restricted to the 196 students who completed both surveys. Participants received course credit or monetary compensation for their time, once upon completion of the initial survey in September and then again after the follow-up survey in April.

### Measures

**Aspiration Index (AI).** In order to measure intrinsic and extrinsic values, a shortened version of the AI (Kasser & Ryan, 1996) was administered. On the AI, participants are asked to rate the personal importance of 12 long-term life aspirations on a 7-point scale, from *not at all important* to *very important*. For example, 2 sample items for intrinsic aspirations were “to work for the betterment of society” and “to have committed, intimate relationships,” while 2 sample items for extrinsic aspirations were “to have your name appear frequently in the media” and “to be financially successful.” At baseline, the Cronbach’s  $\alpha$  for the items measuring importance placed on intrinsic values was .70, while the Cronbach’s  $\alpha$  for the items measuring importance placed on extrinsic values was .83. In line with the methodology of previous research (Sheldon & Kasser, 2001, 2008),

we calculated an index of relative prioritization of intrinsic to extrinsic values at each time point (T1 and T2), by subtracting each participants’ mean rating for extrinsic values from their mean rating of intrinsic values. With this index calculated separately for T1 and T2, we then calculated the change in prioritization of values from September to April by subtracting the T1 relative index from the T2 relative index.

**SWB Index.** To account for both cognitive and affective components, SWB was operationalized as the combination of three distinct components: life satisfaction, positive affect, and negative affect (Diener 1984, 2000). The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) was used to measure subjective life satisfaction. The SWLS consists of five statements, such as “The conditions of my life are excellent,” which participants rate on a 7-point scale from strongly *disagree* to *strongly agree*. Positive and negative affect was measured using Diener and Emmon’s Mood Report (1984), a 9-item measure comprised of four words describing positive emotional states, such as “calm” and “joyful,” and five words describing negative emotional states such as “frustrated” and “depressed.” Each word is rated by participants on a 7-point scale to indicate the extent to which they feel that way over the past 2 weeks, with 1 being *slightly or not at all*, and 7 being *extremely*. Baseline Cronbach’s  $\alpha$  was .87 for SWLS, .87 for positive affect, and .79 for negative affect. A mean score of well-being at each time point was obtained by taking the mean scores of positive affect, reversed negative affect, and life satisfaction.

**PWB.** In order to assess PWB, we employed the 18-item version of Ryff and Keyes (1995) scales of PWB, based on a eudaimonic conceptualization of well-being. The measure consists of six subscales: purpose in life, positive relations with others, autonomy, environmental mastery, self-acceptance, and personal growth. Participants rated each statement on a 7-point scale, from *strongly disagree* to *strongly agree*. A mean PWB score across the six subscales was computed at both time points. Baseline Cronbach’s  $\alpha$  was .73 across the 18 items.

**Erikson Identity and Intimacy Resolution.** In order to assess resolution of identity and intimacy, we administered two subscales of the Erikson Psychosocial Stage Inventory (EPSI; Rosenthal, Gurney, & Moore, 1981), one designed to measure identity resolution and the other designed to measure intimacy resolution. Each subscale consists of 12 statements rated on a 7-point scale, from *strongly disagree* to *strongly agree*. For example, two statements from the intimacy subscale are “I care deeply for others” and “being alone with other people makes me feel uncomfortable” (*r*), while a statement from the identity subscale is “the important things in life are clear to me.” The Cronbach’s  $\alpha$  for the items related to identity resolution .85, while it was .83 for the items measuring intimacy resolution at baseline.

**Table 1.** Means, Standard Deviations, and Correlations of Study Variables.

	N	M	SD	1	2	3	4	5	6	7	8
1. T1 prioritization of intrinsic values	196	2.22	1.52	—							
2. T2 prioritization of intrinsic values	196	2.21	1.59	.81**	—						
3. Change in prioritization of intrinsic values, from T1 to T2	196	-.01	.97	.22**	.34**	—					
4. T2 Erikson Identity Stage Resolution Score	196	4.78	.95	.16*	.31**	.25**	—				
5. T2 Erikson Intimacy Stage Resolution Score	196	5.01	.93	.26**	.38**	.20**	.64**	—			
6. T1 SWB	196	4.93	.86	.25**	.28**	.11	.42**	.40**	—		
7. T2 SWB	196	4.65	.95	.18*	.29**	.19**	.55**	.41**	.58**	—	
8. T1 Psychological Well-being	196	5.38	.65	.34**	.45**	.18**	.66**	.57**	.64**	.50**	—
9. T2 Psychological Well-being	196	5.21	.78	.29**	.50**	.33**	.78**	.62**	.52**	.60**	.76**

\* $p < .05$ . \*\* $p < .01$ .

## Results

### Preliminary Results

Means, standard deviations, and correlations between the variables of interest can be found in Table 1. As can be seen in Table 1, both SWB and PWB in April were significantly related to SWB in September, PWB in September, prioritization of intrinsic values in September, prioritization of intrinsic values in April, change in prioritization of intrinsic values from September to April, change in identity resolution in April, and intimacy resolution in April. Due to the high correlation between identity and intimacy resolution ( $r = .64, p < .01$ ), in subsequent analyses when looking at the differential outcomes of the two scales, the other scale is controlled for.

In order to test out first hypothesis, that a change in intrinsic values prioritization between September and April would predict SWB in April, we performed a hierarchical regression analysis. With SWB at T2 as the dependent variable, we entered SWB at T1 into the first block and change in intrinsic value prioritization in the second block. Entering baseline SWB in the first block enabled us to use the change in values prioritization score to predict residual change in the dependent variable SWB. At the first step, SWB at T1 was a significant predictor of SWB at T2 ( $\beta = .65, t = 10.0, p < .001$ ), explaining 58% of the variance in later SWB,  $F(1, 195) = 100.1$ . At the second step, change score in intrinsic values prioritization from T1 to T2 was significantly related to SWB at T2 ( $\beta = .13, t = 2.20, p < .05$ ) and predicted an additional 2% in the variance of SWB at T2. Next, we repeated the hierarchical regression, but examined the PWB as the dependent variable, rather than SWB. At the first step, PWB at T1 was significantly related to PWB at T2 ( $\beta = .72, t = 15.8, p < .001$ ). At the second step, change in intrinsic values prioritization from T1 to T2 was significantly positively associated with PWB at T2 ( $\beta = .21, t = 4.53, p < .001$ ), predicting an additional 4% in the variance in PWB.

In order to test our second hypothesis, that a change in intrinsic values prioritization over time would predict a change in identity and intimacy stage resolution, we performed two hierarchical linear regressions, regressing identity and then intimacy resolution at T2 on stage resolution at T1 and change in intrinsic values prioritization. In the regression for identity resolution, identity resolution in September ( $\beta = .65,$

$t = 10.34, p < .001$ ) and intimacy resolution in September ( $\beta = .12, t = 1.98, p = .05$ ) were both significant predictors of identity resolution in April at the first step, and change in intrinsic values prioritization was a significant predictor of identity resolution at the second step ( $\beta = .26, t = 3.50, p < .001$ ), explaining an additional 3% of the variance in identity stage resolution in April,  $F(3, 195) = 84.49$ . In the regression for intimacy resolution, intimacy resolution at T1 ( $\beta = .73, t = 12.61, p < .001$ ) was a significant predictor of intimacy resolution at T2, while identity resolution at T1 was unrelated ( $\beta = .01, t = 1.5, ns$ ). At the second step, change in intrinsic values prioritization was a significant predictor of intimacy resolution in April ( $\beta = .13, t = 3.04, p < .01$ ), explaining an additional 2% of the variance  $F(3, 195) = 109.90$ .

### Mediation Analyses

In order to examine whether the association between change in prioritization of intrinsic values from September to April and well-being in April was mediated by increased resolution of Eriksonian stages of identity and intimacy (Hypothesis #3), we employed Preacher and Hayes' (2008) *Indirect* macro for assessing mediation and indirect effects. This method uses bootstrapping resampling ( $k = 1,000$  in the present study) to estimate 95% confidence intervals (CI) of the indirect effects. We ran two separate analyses, one for SWB and the other for PWB. First, we tested for indirect effects on T2 SWB through both T2 identity and T2 intimacy resolution, controlling for T1 SWB, T1 identity resolution, and T1 intimacy resolution. Results revealed that change in prioritization of intrinsic values was a significant predictor of the proposed mediators identity resolution  $b = .17$  (standard error [SE] = .05,  $p < .001$ ) and intimacy resolution  $b = .15$  ( $SE = .04, p < .01$ ). In turn, there was a significant direct effect of identity resolution on SWB  $b = .36$  ( $SE = .08, p < .001$ ), but no direct effect of intimacy resolution on SWB  $b = .08$  ( $SE = .10, ns$ ). The bootstrapping resampling procedure estimated the indirect effect of change in prioritization of values on SWB through later identity resolution to be  $b = .06$  ( $SE = .02$ ), with the 95% CI ranging from .02 to .12. There was no indirect effect through intimacy resolution,  $b = .01, CI [-0.02, 0.5]$ . The direct effect of change in prioritization of intrinsic values on T2 SWB was reduced to

$b = .04$  ( $SE = .05$ ,  $ns$ ) when identity and intimacy resolution at T2 were entered into the models as predictors, suggesting full mediation.

Next, we ran the mediation model with PWB instead of SWB. Controlling for stage resolution and PWB at T1, change in prioritization of intrinsic values was a significant predictor of the proposed mediator identity resolution  $b = .15$  ( $SE = .05$ ,  $p < .001$ ) and intimacy resolution  $b = .14$  ( $SE = .04$ ,  $p < .001$ ). There was a significant direct effect of both identity resolution  $b = .38$  ( $SE = .05$ ,  $p < .001$ ) and intimacy resolution  $b = .16$  ( $SE = .05$ ,  $p < .01$ ) on PWB at T2. The bootstrapping resampling procedure estimated the indirect effect of change in prioritization of intrinsic values through identity resolution on PWB at T2 to be  $b = .08$  ( $SE = 0.03$ ), CI [0.04, 0.15]. The indirect effect of change of prioritization of values through intimacy resolution on PWB at T2 was  $b = 0.03$  ( $SE = .01$ ), CI [0.01, 0.07]. The total effect of change in prioritization of intrinsic values on PWB at T2 was significant  $b = .22$  ( $SE = .05$ ,  $p < .001$ ). The direct effect of change in prioritization of intrinsic values on T2 PWB was reduced to  $b = .11$  ( $SE = .04$ ,  $p < .01$ ) when identity and intimacy resolution at T2 were entered into the models as predictors, suggesting partial mediation. Overall, these results support our Hypothesis 3 that stage resolution over the academic year mediates the relationship between a change in prioritization of intrinsic values and well-being in April.

## Discussion

We found support for our initial hypothesis, that an increase in prioritization of intrinsic, relative to extrinsic, values would be positively associated with increases in well-being (both hedonic and eudaimonic) over the school year. In our sample, individuals who became more oriented toward values of community contribution, close relationships, and self-growth (as opposed to values of image, wealth, and fame) over the academic year, also tended to be more satisfied with their life and psychologically healthy. This replicates the findings of a series of longitudinal studies by Kasser and colleagues (2013). Second, we found an association between increase in relative prioritization of intrinsic values from September to April, and both identity and intimacy resolution in April, controlling for baseline stage resolution. This supported our second hypothesis that change toward intrinsic values prioritization across the year among the college student sample would predict increased psychosocial development of the identity and intimacy stages.

Finally, mediation analyses supported our hypothesis that stage resolution mediated the relationship between value prioritization and well-being. Indeed, the relationship between change in value prioritization and end-of-year SWB was reduced to zero once identity and intimacy resolution were entered into the model. Interestingly, for SWB, only identity resolution, but not intimacy resolution was a significant mediator, while both identity and intimacy resolution were significant mediators of PWB. Perhaps the results of this mediation model would have been different if we followed a group of

adults in their early 30s, with intimacy influencing SWB as much or more than identity resolution. Intimacy resolution is theoretically expected to follow identity resolution and may not be as important for this sample's age group (mean 20 years old), particularly as most North American university students do not find life partners until after university (e.g. Arnett, 2000). In the present study, it appears that identity resolution is especially crucial for university students SWB, while both identity and intimacy resolution are important for more eudaimonic conceptualizations of well-being, as evidenced by the results for PWB.

It is important to consider the dark side of values change. While we have framed the results of our analyses in terms of change toward prioritization of intrinsic values leading to positive changes in psychosocial stage resolution and well-being in our sample, the nature of this association also allows for the interpretation that an increase in prioritization of extrinsic, relative to intrinsic, values may lead to decreases in psychosocial stage resolution and well-being over the academic year. The association between decreased prioritization of intrinsic values over time and decreases in SWB and PWB replicates the recent studies of Kasser et al. (2013). In Kasser et al.'s investigation, change toward extrinsic value prioritization not only led to decreased SWB but also increased symptoms of mental illness (Study 1).

There are certain limitations of the present study, which future research should aim to correct. First, we relied on self-report measures to serve as the independent and dependent variables. Our measures of identity and intimacy resolution, two self-report scales from the EPSI (Rosenthal et al., 1981), could have been supplemented by informant reports, or a behavioral measure at both time points, in order to increase the external validity. Second, as the study was correlational in nature, causality in the relationship between value change, stage resolution, and change in SWB cannot be inferred. It is possible that an alternate model is responsible for the associations found in the data. For example, greater resolution of identity and intimacy stages may be driving a change in values. Unfortunately, we would need more time points of assessment to determine directionality of the association and are unable to perform such analyses with the data. The results of the present investigation carve a logical path toward a future experimental study to determine the effects of manipulating students' values orientations on both temporary and long-term changes in identity and intimacy resolution. Lekes, Hope, Gouveia, Koestner, and Philippe (2012) designed an intervention in which participants randomized to the experimental group were prompted to identify their own values and complete an open-ended writing reflection on their most important intrinsic values. In the follow-up 1 month later, participants in the experimental group reported both increased prioritization of intrinsic values and well-being. The protocol from Lekes et al. could be employed to investigate psychosocial stage resolution as a possible mediator in an experimental study.

Overall, the present study offers a novel contribution to the SDT research on life values and well-being, by incorporating

the rich developmental theory of Erikson, and evaluating the compatibility of psychosocial stage change with value change. We found support for Erikson's mid-20th-century ideas, which implicated an important role for values in psychosocial development. In our study, we discovered that increased prioritization of intrinsic values across the academic year was associated with a change in both SWB and PWB and that this association was mediated by increased psychosocial resolution across the year.

In contemporary North American society, extrinsic values are increasingly given more space in the public domain, with more "advertising clutter" encountered everyday (Rumbo, 2002), along with outlets for celebrity obsession (from reality television to celebrity gossip blogs, available on demand at any hour of the day). At the societal level, this study extends the accumulating literature that relative focus on intrinsic values may serve youth well, promoting adaptive functioning and well-being, while focus on extrinsic values may indirectly harm, stunting psychosocial growth and decreasing well-being. Perhaps we should give more credence to Erikson's warning on the dangers of a move toward more materialistic values in North American society (1959), when considering the potential merit and consequences of selling public space for advertisements promoting consumerism.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research and/or authorship of this article: Social Sciences and Humanities Research Council (SSHRC) and Fonds de Recherche sur la Société et Culture (FRQSC).

### Note

1. Supplemental analyses examining the model with change in each of the three intrinsic values individually revealed a similar pattern of results, except for aspirations for meaningful relationships. The direct effect of change in aspirations for meaningful relationships on SWB at T2 was not significant.

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