

Generativity Does Not Necessarily Satisfy All Your Needs: Associations Among Cultural Demand for Generativity, Generative Concern, Generative Action, and Need Satisfaction in the Elderly in Four Cultures

Jan Hofer and Holger Busch
University of Trier

Alma Au
Hong Kong Polytechnic University

Iva Poláčková Šolcová
The Academy of Sciences of the Czech Republic

Peter Tavel
Palacky University

Teresa Tsien Wong
Hong Kong Polytechnic University

The present study examines the association between various facets of generativity, that is, cultural demand for generativity, generative concern, and generative action, with the satisfaction of the needs for relatedness, competence, and autonomy in samples of elderly from Cameroon, China (Hong Kong), the Czech Republic, and Germany. Participants provided information on self-transcendence values (internalized cultural demand), generative concern and action, and need satisfaction. Results suggest, first, that internalized cultural demand affects generative action indirectly through generative concern, second, that generative concern has a positive direct effect on need satisfaction, but that, third, there is also an indirect effect of generative concern on need satisfaction through generative action, which, fourth, is positive for the needs for relatedness and competence but negative for the need for autonomy. These findings were culture-invariant in our study, suggesting generalizability to other cultures. They are discussed with respect to the role of values in generativity and a possible trade-off of generative action for the satisfaction of needs at least in the elderly.

Keywords: generative concern, internalized cultural demands, generative behavior, basic need satisfaction, culture

In general, survival and continuity, but also positive change of any nation, society, and community, strongly depend on the willingness of its members to invest resources into future generations—in other words, to behave in a generative way (Bellah,

Madsen, Sullivan, Swidler, & Tipton, 1992; Peterson, 2004). Generativity was introduced as a concept by Erikson (1963) in his theory on psychosocial development over the life span. According to this theory, the successful resolution of eight developmental crises across the life span makes people grow and develop as a person. Defined as the concern in establishing and guiding the next generation, individuals who successfully resolve the developmental crisis of generativity versus stagnation take responsibility for the well-being of future generations and help them to thrive. In contrast, a failure to contribute to the next generation blocks personal development: Individuals develop a sense of stagnation and self-absorption, feel detached from others, and offer little to their society (Erikson, 1982; see Van Hiel, Mervielde, & De Fruyt, 2006, for a more detailed discussion of stagnation).

Erikson (1963) considered generativity to be particularly salient in middle adulthood, but did not mean that it was restricted to that age period (Erikson, Erikson, & Kivnick, 1986). Specifically, the significant role of generativity for successful aging has recently been highlighted on both theoretical and empirical grounds (e.g., Schoklitsch & Baumann, 2012; Versey, Stewart, & Duncan, 2013). Following this line of reasoning, the present study examines the relationship between generativity and satisfaction of basic psychological needs among elderly people from Cameroon, China (Hong

This article was published Online First December 21, 2015.

Jan Hofer and Holger Busch, Department of Psychology, University of Trier; Alma Au, Department of Applied Social Sciences, Hong Kong Polytechnic University; Iva Poláčková Šolcová, Institute of Psychology, The Academy of Sciences of the Czech Republic; Peter Tavel, Department of Psychology, Palacky University; Teresa Tsien Wong, Department of Applied Social Sciences, Hong Kong Polytechnic University.

This research was assisted by a Grant of the German Research Foundation (HO2435/5-1). We thank the Hong Kong Society for the Aged, the Hong Kong Association of Senior Citizens, the Tsim Sha Tsui District Kaifong Welfare Association-TSTDKFWA Activities Centre for the Elderly, the Hong Kong Christian Service, the Kwai Tsing Safe Community and Healthy City Association-Tsing Yi Community Health Centre, the S.K.H. Holy Carpenter Church Community Centre, and REMEDIUM, o.p.s. for help in recruitment of participants in Hong Kong and Prague.

Correspondence concerning this article should be addressed to Jan Hofer, University of Trier, Department of Psychology, Developmental Psychology, D-54296 Trier, Universitätsring 15, Germany. E-mail: hofer@uni-trier.de

Kong), the Czech Republic, and Germany. The main aim of the study thus is to identify universal psychological processes related to successful aging.

A Model of Generativity

The present study is based on the generativity model introduced by McAdams and de St. Aubin (1992). The authors define *generativity* as a complex psychosocial construct that incorporates seven different features, which all are oriented around the overall goal of providing for the next generation (McAdams, Hart, & Maruna, 1998). According to the model, generativity begins with an *inner desire* for symbolic immortality and communal nurturance and *cultural demand*. Cultural demand reflects age-graded societal norms experienced by the individual (McAdams & de St. Aubin, 1992). Inner desire and cultural demand feed a conscious *concern* for generativity that represents a positive attitude toward own and others' strivings for generativity. Generative concern leads to generative *commitment*, that is, the establishment of generative goals, which are finally linked to generative *action*. However, the link between generative concern and commitment is supposed to be influenced by *belief in the species*: Without a belief in the worthwhileness of human life, people will fail to commit to generative goals. Finally, generative action then is integrated into an individual's life story *narration* in a meaningful way.

In addition to this idealized sequence of the seven facets of generativity, McAdams and de St. Aubin (1992) propose that generative action may directly be stimulated by inner desire or, more relevant for the present study, cultural demand. Yet behavior that bypasses generative thoughts and plans may not be truly generative, and, thus, people will not benefit from it because they do not experience personal fulfillment (see McAdams et al., 1998, for further details on the model of generativity).

In the present study, we focus on three components of the generativity model: the extent to which cultural demand for generativity is internalized, generative concern, and generative action. Moreover, we scrutinize the link between generativity and well-being. The present study thus contributes to generativity research in various ways. First, it examines how internalized cultural demand affects generative concern; to date, there has been little empirical research on cultural demand for generativity. Second, it considers three components of the generativity model simultaneously, which has rarely been done before. Third, it takes a detailed look at generativity's contribution to the satisfaction of basic needs. We will elaborate on these issues in the following sections.

Internalized Cultural Demand for Generativity: Self-Transcendence Values

Cultural demands are considered to be age-graded standards and expectations concerning how people may and should start to take responsibility for the next generation (McAdams, 2001). In general, members of a given culture share a view of when certain events should take place in a person's life (e.g., Neugarten, Moore, & Lowe, 1965). They also share a view on what behavior ought to look like in certain situations (e.g., White, 1998). However, there is, of course, individual variation as to

the extent to which people accept their culture's view as valid (Neugarten et al., 1965). Applied to cultural demand for generativity, thus, cultures set up different guidelines for their members' generative inclinations (such as, e.g., the timing of offspring, or in Kotre's [1996] terms, *biological generativity*). In other words, according to de St. Aubin (2004), cultures specify which generative behavior is appropriate and the age at which it is supposed to be shown (see also McAdams et al., 1998). Still, individuals do not necessarily adopt these cultural expectations in entirety. Thus, examining cultural demand for generativity in our view requires looking at the extent to which such expectations are internalized by the individual.

The extent of internalization of cultural expectations is reflected in values: Through constant exposure to cultural norms, individuals are moved toward adopting values as guiding principles in their lives (Schwartz, 2009). For that reason, in the present study, we operationalize internalized cultural demand by the importance individuals assign to certain values. According to Schwartz (1992, 1994), values are defined as transsituational and abstract representations of desirable end states; as guiding principles in life, they are standards for the selection and evaluation of actions. The theory of basic human values proposed by Schwartz covers 10 universal value types (e.g., achievement, power, self-direction, stimulation) that reflect four higher order bipolar value dimensions: Openness to Change versus Conservation and Self-Enhancement versus Self-Transcendence.

For the study at hand, the value dimension Self-Transcendence is central as our measure of internalized cultural demand for generativity. Self-transcendence includes the value types of benevolence and universalism. Benevolence characterizes strivings of preserving and enhancing the welfare of those with whom one is in frequent personal contact; universalism describes the significance of understanding, appreciation, tolerance, and protection for the welfare of all people and for nature (Schwartz, 1994). Thus, self-transcendence includes value types that emphasize the care for the survival and prosperity of family, group members, and the world at large. That is, we assume self-transcendence values to be a critical motivator of generative attitudes, that is, *generative concern* in McAdams and de St. Aubin's (1992) terminology.

Generative Concern, Generative Action, and Need Satisfaction

Generative concern has repeatedly been shown to be predictive of generative action (e.g., McAdams & de St. Aubin, 1992; McAdams, de St. Aubin, & Logan, 1993). Individuals can express their generative concern through a wide array of generative action, such as parenting, volunteer work, professional activities, and involvement in political or community organizations (e.g., Clark & Arnold, 2008; Cox, Wilt, Olson, & McAdams, 2010; Hart, McAdams, Hirsch, & Bauer, 2001; Peterson, Smirles, & Wentworth, 1997). Furthermore, in line with Erikson's (1963) theorizing, generativity has been linked with psychological maturity and well-being in adulthood and old age (e.g., Sheldon & Kasser, 2001; Stewart, Ostrove, & Helson, 2001). Evidence for this argument comes from research that has shown that generativity is positively associated with hedonic and eudaemonic well-being, such as, for example, life satisfaction and purpose in life (An & Cooney, 2006;

Busch & Hofer, 2012; Cox et al., 2010; Grossbaum & Bates, 2002; Hofer, Busch, Chasiotis, Kärtner, & Campos, 2008; Rothrauff & Cooney, 2008).

The present study follows a specific eudaemonic approach to well-being: Deci and Ryan (2000) argue that people develop and function in a healthy and optimal way when their basic psychological needs are satisfied. Self-determination theory proposes three basic psychological needs: relatedness, competence, and autonomy. *Relatedness* represents interpersonal acceptance and closeness. *Competence* denotes the ability to skillfully master challenges in one's environment. Finally, *autonomy* refers to feeling oneself to be the agent of one's action and experiencing identification with one's actions (Deci & Ryan, 2000, 2008). Generativity, which is considered to be intrinsically motivated (Sheldon & Kasser, 2001), is assumed to predict need satisfaction and thus reflect successful development in old age.

The Present Research

Based on the generativity model proposed by McAdams and de St. Aubin (1992), the present study examines the relationship between three facets of generativity, that is, internalized cultural demand for generativity, generative concern, and generative action. Rather than focusing on differences between cultures in their cultural demand for generativity, we consider individuals' self-transcendence values as their internalized cultural demand and hence a crucial motivational source of generativity. Specifically, we hypothesize that internalized cultural demand predicts individuals' generative concern, which in turn positively relates to generative action. Furthermore, we assume that generativity explains variance in individuals' need satisfaction. In detail, we hypothesize a positive link between generative concern and need satisfaction. Yet we expect the relationship between generative concern and need satisfaction to be—at least partly—mediated by generative action (see Figure 1).

Given that the majority of findings in psychology, including what we know about determinants and consequences of generativity, stems from Western samples (Arnett, 2008), the cross-cultural design of the present study allows testing whether the relationships under consideration are equivalent across diverse cultural samples. Thus, we selected cultural contexts that widely differ in cultural markers typically used in research (see van de Vijver & Leung, 1997).

We based the selection of cultural contexts on cultural differences in the value dimensions Openness to Change and Conservation (Schwartz, 1992; for previous findings on the cultural contexts at hand see, e.g., Hofer et al., 2010, and Jowell & the Central Coordinating Team, 2007). For the present samples, analyses have shown that participants from Cameroon, China (Hong Kong), and, to some extent, the Czech Republic emphasize values accentuating order, self-restriction, preservation of the past, and resistance to change (i.e., Conservation) more than participants from Germany; German and, to a lesser extent, Hong Kong Chinese and Czech participants place a higher commitment to values that emphasize independence of thought, action, and feelings and readiness for change (Openness to Change) than Cameroonian participants (see Hofer et al., 2014). Thus, findings point to significant variation across central value dimensions that are typically used as cultural markers. In sum, the present study takes seriously the claim to include culture into psychological research and allows addressing the problem of generalizability of findings.

The present study assumes that despite potential cultural mean differences in psychological constructs, the hypothesized psychological mechanisms can be generalized to a variety of cultural contexts. To note, we have a structure-oriented rather than a level-oriented focus (van de Vijver & Leung, 1997): The emphasis in analyses is on the equivalence of relationships among psychological constructs across cultural groups rather than differences in mean levels of psychological constructs between cultural samples. To the best of our knowledge, the relation of internalized cultural demand, generative concern, and generative action with the satisfaction of the needs for autonomy, competence, and relatedness has not been studied so far, not to mention across cultural samples.

Data were analyzed according to the following plan: In a first step, we scrutinized measures for cross-cultural measurement invariance with exploratory factor analyses to guarantee that (latent) variables in the assumed models are psychometrically sound. Then, we tested measurement invariance in more detail and tested the hypothesized model on the relationship between components of generativity and need satisfaction with a combination of confirmatory factor analysis and path analysis.

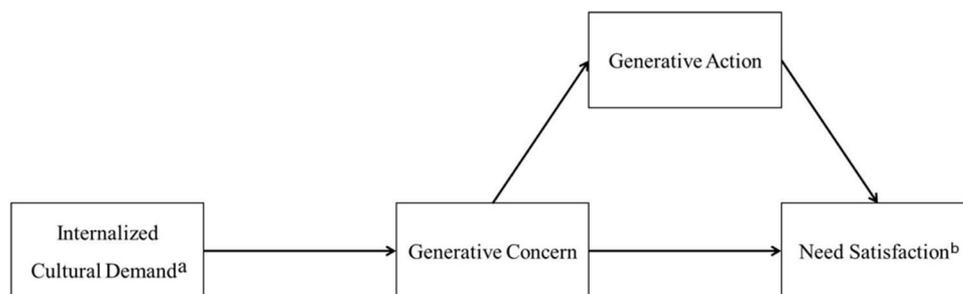


Figure 1. Hypothesized model linking internalized cultural demand, generative concern, and generative action to satisfaction of basic psychological needs. a = Internalized cultural demand for generativity as assessed through self-transcendence values. b = Need satisfaction refers to the satisfaction of the needs for relatedness, competence, and autonomy, respectively.

Method

Procedure

German participants were recruited in Osnabrück, Lower Saxony, via ads in local newspapers that have special supplements for elderly people. In Prague and Olomouc (Czech Republic) as well as in Hong Kong, elderly people were contacted via flyers and notes in local senior centers. In Cameroon, elderly people typically return to their home village after retirement. Thus, local research assistants visited villages near major cities in the North Province of Cameroon to recruit elderly people for the present study. Only a smaller number of elderly people in Cameroon were recruited in urban areas. To guarantee ethnic and cultural homogeneity within each of the four samples, only native participants were recruited. To account for the multiethnic population in Cameroon, sampling was restricted to ethnic Grassfield Bantus (Nso) from the Anglophone North-West province (Mbaku, 2005).

Despite its arbitrary nature, in most Western-developed cultural contexts, a chronological age of 65 years has been widely accepted as definition of the elderly person, that is, the beginning of old age. Although similar conceptualizations can be found in non-Western cultures as well (e.g., Togonu-Bickersteth, 1987), it may not be well suited to the situation in non-Western cultural contexts because it neglects differences in average life expectancy and social factors such as changes in social roles (World Health Organization, 2014). Thus, we used 60 years of age as a marker for the beginning of old age in the study at hand (e.g., United Nations, Department of Economic and Social Affairs, Population Division, 2013).

Elderly people voluntarily participated in the study and were assured that any information given would be treated confidentially and anonymously. In Cameroon and Germany, participants received monetary compensation proportional to average differences in gross domestic product per capita. Chinese and Czech participants received coupons for local supermarkets. Data collection took place on university premises in Germany, in local senior centers in Hong Kong, and at participants' homes in Cameroon and in the Czech Republic. Local research assistants were present at all research sites to help clarify any questions that arose during data collection.

Sample

Data were available from a total of 852 noninstitutionalized participants from Cameroon ($n = 223$; 112 women), China (Hong Kong; $n = 250$; 179 women), the Czech Republic ($n = 154$; 88 women), and Germany ($n = 225$; 126 women). In total, participants' age ranged from 59¹ to 96 years ($M = 68.90$, $SD = 7.20$). Chinese ($M = 72.60$, $SD = 7.80$), and Czech participants were significantly older ($M = 71.39$, $SD = 5.77$) than German ($M = 67.39$, $SD = 5.90$) and Cameroonian ($M = 64.57$, $SD = 5.64$) participants, who also differed significantly from each other in age, $F(3, 848) = 72.95$, $p < .001$, $\eta^2 = .20$.² Although 550 participants had a steady partner (married, $n = 532$), 298 participants were single. Four participants did not indicate their relationship status. The percentage of participants with a steady relationship was highest among Cameroonian participants (76%), whereas it did not differ much between Chinese (65%), Czech (57%), and German participants (63%), $\chi^2(3) = 17.83$, $p < .001$. Finally, 328 partic-

ipants indicated a low level of formal education (primary school education or less), 175 a medium level (junior secondary school or ordinary level education), and 344 a high level (secondary school or university education). Five participants did not indicate their level of formal education. Cultural samples differed from each other in formal education, $F(3, 843) = 99.98$, $p < .001$, $\eta^2 = .26$: Cameroonian ($M = 1.59$, $SD = .81$) and Chinese ($M = 1.69$, $SD = .89$) participants reported a lower mean level of education than German ($M = 2.25$, $SD = .78$) and Czech participants ($M = 2.81$, $SD = .57$), who also differed significantly from each other in mean level of education.³

Measures

Test methods were administered to participants individually. First, the questionnaires on basic need satisfaction, values, generative action, and generative concern were given. Finally, participants provided information on their sociodemographic characteristics.

Corresponding to the research sites, measures were administered in Chinese, Czech, or German. Cameroonian participants received English versions. Although Lamnso is the native language among the Nso in the Northwest province, English is the official language and is predominantly used in everyday life. Furthermore, only very few people are able to read or write in Lamnso. Yet assistants, who were all ethnic Nso, were trained to give (standardized) illustrations of instructions and questionnaire items in Lamnso or Pidgin English in case of difficulties in understanding.

Given its extensive use in cross-cultural research, Chinese, Czech, English, and German versions of the Schwartz Value Survey (SVS; Schwartz, 1992) were available. Although English and German versions were available for all measures, a number of Chinese (need satisfaction, generative action) and Czech (need satisfaction, generative action, generative concern) versions were not at hand. Bilingual research assistants in Hong Kong and a professional translator in Prague translated the lacking language versions from their original English versions into Chinese and Czech, respectively. In each case, the quality of the translated material was ensured by a back-translation procedure.

Need satisfaction. We employed the Basic Need Satisfaction in Life Scale (BNS; Gagné, 2003) to assess the satisfaction of the needs for relatedness, competence, and autonomy. The questionnaire has already been successfully used in cross-cultural research (e.g., Hofer & Busch, 2011). The scale has 21 items concerning the three needs for relatedness (eight items; e.g., "People in my life care about me"), competence (six items; e.g., "Most days I feel a sense of accomplishment from what I do"), and autonomy (seven items; e.g., "I feel like I am free to decide for myself how to live my life"). Each item is evaluated on a Likert-scale ranging from 0 (*not true at all*) to 6 (*definitely true*).

For relatedness, Cronbach's alphas were sufficiently high (Nunnally, 1978), with .79, .62, .72, and .72 for the Cameroonian,

¹ The sample included three German and one Chinese participant aged 59 years (but close to 60 years).

² We report eta-squared (η^2) as the index of the strength of association; η^2 s of .01, .06, and .14 can be interpreted as small, medium, and large effect sizes, respectively (Cohen, 1988).

³ Because of types of degrees in the educational system, a medium level of education could not be assigned to Czech participants.

Czech, Chinese, and German samples, respectively. For competence, alpha was .58 (Cameroonian sample), .65 (Czech sample), .53 (Chinese sample), and .60 (German sample). Additional analyses indicated low item-scale correlations for the item “I have been able to learn interesting new skills recently” in the Cameroonian sample ($r_{it} = .05$), and for the item “In my life I do not get much of a chance to show how capable I am” in the Chinese sample ($r_{it} = .07$). To enhance alphas for competence, we did not use the respective items in the Cameroonian and Chinese samples. Cronbach’s alphas for the five-item competence scales were .67 in the Cameroonian sample and .58 in the Chinese sample. Finally, for autonomy, Cronbach’s alphas were .52, .69, .52, and .65 for the Cameroonian, Czech, Chinese, and German samples, respectively. Dropping the item “In my daily life, I frequently have to do what I am told” in the Chinese sample ($r_{it} = .07$) enhanced alpha to .58 among Chinese participants. In the Cameroonian sample, none of the autonomy items showed a low item-scale correlation ($r_{it} \geq .20$). Thus, item exclusion was not an option to increase Cronbach’s alpha.

Additional analyses showed that the partly low alpha values do not result from multidimensionality of the scales. Exploratory factor analyses, separately conducted for each of the scales, verified that all items significantly loaded on a given factor within each of the cultural samples. The relatively low alphas might result from the brevity of the scales (Johnston & Finney, 2010) and the complexity of the construct to be measured, so that different items may serve as alternative, not simultaneous, expressions of the construct (Zalewska & Brandstätter, 2001). Findings (Johnston & Finney, 2010) that low alphas for the BNS scales, particularly for competence and autonomy are common—even in studies with relatively homogeneous student samples—support the argument. Thus, moderate alphas for the BNS scales within our heterogeneous cultural samples do not necessarily point to a low quality of our measures.

Internalized cultural demand for generativity. By using the SVS (Schwartz, 1992), we assessed internalized cultural demand for generativity through the importance of self-transcendence values. The Self-Transcendence dimension encompasses values that emphasize the welfare of those with whom one is in frequent personal contact (benevolence; e.g., helpful, responsible) and the welfare of all people and the protection of nature (universalism; e.g., social justice, protecting the environment). Thus, we employed a total of 13 items (five items for benevolence, eight for universalism) that have universally been shown to have the same meaning with respect to self-transcendence. To assess the importance that participants attribute to those values as guiding principles in their lives, items are rated on a Likert scale from -1 (*opposed to my values*) to 7 (*of supreme importance*). To date, the SVS is one of the standard instruments in cross-cultural psychology and has proven to be a reliable and valid instrument in more than 80 cultural contexts around the globe. Cronbach’s alphas for self-transcendence were .73 (Cameroonian sample), .82 (Czech sample), .89 (Chinese sample), and .87 (German sample).

Generative action. We assessed generative action with the Generative Behavior Checklist (GBC) developed by McAdams and de St. Aubin (1992). Typically, the GBC includes 50 items, including 10 “filler” items representing actions unrelated to generativity. In the present study, only the 40 generative behavior items were administered. On a scale from 0 (*not performed*) to 2

(*performed more than once*), participants were asked to indicate how often they have performed each of the acts over the past 2 months (e.g., taught somebody a skill, attended a community or neighborhood meeting, gave money to a charity).

As research on generative action across cultural groups is scarce, we first screened whether the items of the GBC are relevant indicators of generative action across cultural samples. Consequently, we excluded 11 items from further consideration, as 85% or more of the participants in at least two of the cultural samples indicated that they did not perform the act in the last 2 months (e.g., donated blood, invented something). Additionally, we excluded one item (i.e., listened to a person tell me his or her personal problems) because few participants indicated that they did not perform the act in the recent past. Thus, we used 28 items for the generative action score. Cronbach’s alphas for the reduced scale were .80 (Cameroonian sample), .79 (Czech sample), .87 (Chinese sample), and .74 (German sample).

Generative concern. The Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992) was administered to assess generative concern. The LGS consists of 20 items (e.g., “I think that I will be remembered for a long time after I die”) that represent a general disposition for generativity. Items are evaluated on a 4-point Likert scale from 0 (*never*) to 3 (*very often*).

Preliminary findings gained by, for example, exploratory factor analyses indicated that all six reverse-coded items of the LGS should be excluded from further analyses because of nonsignificant factor loadings in at least one cultural group. Furthermore, we dropped the item “If I were unable to have children on my own, I would like to adopt children,” as it did not show a significant factor loading in the Cameroonian and Czech data (for similar findings on item bias related to the LGS, see Hofer et al., 2008). Cronbach’s alphas for the reduced 13-item scale of the LGS were .83 (Cameroonian sample), .85 (Czech sample), .87 (Chinese sample), and .85 (German sample).

Results

Descriptive Statistics of and Correlations Among Psychological Measurements

Table 1 presents descriptive data on measures of psychological constructs. Correlations among measurements are given in Table 2.

As shown in Table 2, except for the correlation between internalized cultural demand and competence, as well as that between generative action and autonomy, all correlations were significantly positive. We further checked whether there were any differences between cultures in the magnitude of those correlations which are not part of the model to be tested (i.e., correlations of internalized cultural demand and generative action as well as need satisfaction, and correlations among the need satisfaction scales). Analyses indicated no significant differences between cultural samples in associations between internalized cultural demand and generative action. Significant differences were found for the associations between internalized cultural demand and need satisfaction scales. There were also differences between cultural samples for correlations among need satisfaction scales. These differences mainly stem

Table 1
Descriptive Statistics of Internalized Cultural Demand, Generative Concern, Generative Action, and Satisfaction of the Needs for Relatedness, Competence, and Autonomy in the Four Cultural Samples

Measurement	Cameroon <i>M (SD)</i>	China <i>M (SD)</i>	Czech Republic <i>M (SD)</i>	Germany <i>M (SD)</i>
Internalized cultural demand	4.83 (.66)	5.36 (1.06)	4.91 (.80)	5.12 (.88)
Generative concern	2.05 (.44)	1.11 (.61)	1.53 (.48)	1.45 (.51)
Generative action	.92 (.27)	.64 (.35)	.71 (.31)	.69 (.26)
Relatedness	4.22 (.88)	4.60 (.87)	4.48 (.70)	4.64 (.75)
Competence ^a	4.35 (.91)	3.63 (1.10)	3.56 (.94)	4.05 (.91)
Autonomy ^b	4.15 (.78)	4.26 (.91)	4.12 (.91)	4.53 (.79)

^a The competence scale for the samples from Cameroon and China were reduced by one item each. ^b The autonomy scale for the Chinese sample was reduced by one item.

from higher associations between measurements in the Chinese sample (details on differences between cultural samples in strength of correlations are given in Footnote 4).⁴

Testing Measurement Invariance and the Equivalence of Psychological Mechanisms in the Four Cultural Samples

Although initial analyses (e.g., reliability and factor analyses) pointed to the significance of our measures across cultural samples, a more detailed examination of measurement invariance is indispensable before a test of the main hypotheses of the study is meaningful. To test measurement invariance and the equivalence of psychological mechanisms (structural model) across cultural samples, we used what is often called a hybrid model approach combining confirmatory factor analysis with path analysis in a single analysis. In doing so, it is successively tested whether the measurement model and the structural weights model uphold.

We defined three increasingly restrictive models for each of the need satisfaction scales: first, the unconstrained model with no equality constraints across cultural groups; second, the measurement weights model in which the measurement weights were constrained to be equal across all groups; and, finally, the structural weights model in which the structural paths were constrained to be equal across all groups, and the variances and covariance of the latent scores were estimated separately for each of the four groups. In detail, we assumed that internalized cultural demand for generativity is positively associated with generative concern, which in turn predicts need satisfaction. In addition to a direct effect, we proposed an indirect effect of generative concern on need satisfaction via generative action. We tested two additional paths linking internalized cultural demand with generative action and need satisfaction, respectively.

Table 2
Correlations Among Internalized Cultural Demand, Generative Concern, Generative Action, and Satisfaction of the Needs for Relatedness, Competence, and Autonomy

Measurement	1	2	3	4	5
1. Internalized cultural demand	—				
2. Generative concern	.14***	—			
3. Generative action	.10**	.63***	—		
4. Relatedness	.23***	.14***	.16***	—	
5. Competence	.06	.46***	.40***	.38***	—
6. Autonomy	.17***	.09**	.03	.42***	.35***

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

Following recommendations on the optimal ratio of cases/observations to number of parameters to be estimated (Bentler & Chou, 1987; Kline, 1998), we used item parcels as indicators of latent constructs in the defined structural equation models to reduce number of free parameters. Even if controversially discussed, item parceling is an adequate approach in structural equation modeling (SEM) procedures if unidimensionality of constructs under consideration is established (e.g., Bandalos, 2002; Little, Cunningham, Shahar, & Widaman, 2002). To circumvent problems in estimation (e.g., Heywood cases), we built at least three balanced parcels per latent variable.⁵

⁴ We tested differences between cultural samples in strength of correlations by employing Fisher's r -to- z transformation. The association between internalized cultural demand and relatedness was more pronounced among Chinese ($r = .39^{***}$) than among German ($r = .22^{**}$; $z = 2.07^*$), Czech ($r = .19^*$; $z = 2.17^*$), and Cameroonian participants ($r = -.12$; $z = 5.78^{***}$), who also showed a lower association between both measures than German ($z = 3.62^{***}$) and Czech individuals ($z = 2.94^{**}$). Further, the magnitude of the correlation between internalized cultural demand and competence significantly differed between Cameroonian ($r = -.08$) and both German ($r = .17^{**}$; $z = 2.66^{**}$) and Chinese participants ($r = .20^{**}$; $z = 3.00^{**}$). Also, the correlation between internalized cultural demand and autonomy was higher among Chinese ($r = .44^{***}$) than among Cameroonian ($r = -.11$; $z = 6.25^{***}$), Czech ($r = .02$; $z = 4.33^{***}$), and German participants ($r = .05$; $z = 4.53^{***}$). Measures of need satisfaction were significantly positively correlated with each other in each of the cultural samples. Yet the correlation between relatedness and competence was lower among Czech ($r = .24^{**}$) than among Cameroonian ($r = .53^{***}$; $z = 3.29^{**}$), Chinese ($r = .49^{***}$; $z = 2.88^{**}$), and German ($r = .45^{***}$; $z = 2.35^*$) participants. Finally, in the Chinese sample ($r = .62^{***}$), the correlation between relatedness and autonomy was higher than among German ($r = .30^{***}$; $z = 4.45^{***}$), Czech ($r = .46$; $z = 2.17^*$), and Cameroonian participants ($r = .21$; $z = 5.21^{***}$), who also showed a lower strength of association between both measures than Czech individuals ($z = 2.71^{**}$). * $p = .05$. ** $p = .01$. *** $p = .001$.

⁵ We built three parcels for internalized cultural demand for generativity: One parcel included the five items of the value type benevolence; the other two parcels (four items each) included items reflecting the value type universalism. We created three parcels for generative concern (two parcels with four items; one parcel with five items) and five parcels for generative action (three parcels with six items; two parcels with five items). Finally, three parcels were built for each of the need satisfaction scales: relatedness (two parcels with three items; one parcel with two items), competence (three parcels with two items; in the Cameroonian and the Chinese samples, one of the parcels encompassed one item only), and autonomy (two parcels with two items; one parcel with three items; in the Chinese sample, the three-item parcel was built by two items only). To note, the measures used in two of the hybrid models were slightly different, as we used a reduced number of items for competence and autonomy, respectively, to enhance alphas in the Cameroonian and Chinese samples (see the Measures section). Thus, analyses on measurement invariance and the equivalence of psychological mechanisms were rerun with the full set of items for competence and autonomy in each of the cultural samples. Findings were exactly in line with the ones reported in text.

Each measurement model included the four latent variables internalized cultural demand, generative concern, generative action, and one of the need satisfaction scales. The measurement weights models were compared with an unconstrained model. We evaluated the fit of two nested models from the perspective of multiple fit indices. Accordingly, a measurement invariance hypothesis should not be rejected when change in fit indices from the more unconstrained to the more constrained model is low (e.g., $\Delta CFI \leq -.01$; $\Delta RMSEA \leq .015$; see Chen, 2007; Cheung & Rensvold, 2002).

Following these recommendations, constraining factor loadings across cultural samples did not result in an impairment of fit (model relatedness, $\Delta CFI = -.005$, $\Delta RMSEA = .001$; model competence, $\Delta CFI = -.006$, $\Delta RMSEA = .001$; model autonomy, $\Delta CFI = -.007$, $\Delta RMSEA = .000$; see Table 3). That is, the measurement weights model did not fit the data worse than the unconstrained model. In each of the cultural samples, all item parcels significantly loaded on the specified factor with factor loadings ranging between .43 and .85 and critical ratios (CRs) > 8.58 ($p < .001$). To conclude, analyses indicate configural and metric measurement invariance, allowing us to meaningfully examine the proposed structural relationships among psychological constructs across cultural groups.

As shown in Table 3, a comparison of the structural weights model with the measurement weights model demonstrated that constraining structural paths to be equal across cultural groups did not lead to an impairment of fit ($\Delta CFI \leq -.006$; $\Delta RMSEAs \leq .001$) in any of the three models on need satisfaction. Thus, the good fit of the structural weights models indicates that the strengths of associations between psychological constructs do not vary between cultural samples.

With respect to the structural weights model on relatedness, there was a significant relationship between internalized cultural demand and generative concern ($CR = 9.22$, $p < .001$; β s ranging

from .33 to .41). Generative concern significantly related to both, relatedness ($CR = 3.34$, $p < .001$; β s ranging from .16 to .26) and generative action ($CR = 15.01$, $p < .001$; β s ranging from .63 to .74), which in turn was significantly associated with relatedness ($CR = 2.32$, $p < .05$; β s ranging from .11 to .18). Thus, analyses verified an indirect effect of generative concern on relatedness via generative action (indirect effects range from .07 to .12).⁶ We tested two more relationships linking internalized cultural demand to generative action and relatedness, respectively. Although analyses did not indicate a significant direct link between internalized cultural demand and generative action ($CR = -1.24$), the indirect effect of internalized cultural demand on generative action via generative concern was well-pronounced (indirect effects range between .22 and .30). Finally, the direct path between internalized cultural demand and relatedness was significant ($CR = 3.41$, $p < .001$; β s ranging from .10 to .19). The indirect effect between both constructs via generative concern was ranging between .07 and .14.

Concerning the model on competence, internalized cultural demand significantly predicted generative concern ($CR = 9.22$, $p < .001$; β s ranging from .34 to .40), which in turn is significantly linked to competence ($CR = 6.65$, $p < .001$; β s ranging from .41 to .56) and generative action ($CR = 15.03$, $p < .001$; β s ranging from .63 to .75), respectively. Generative action is significantly associated with competence ($CR = 2.39$, $p < .05$; β s ranging from .15 to .20). Again, analyses showed an indirect effect of generative concern on competence via generative action (indirect effects range between .09 and .13). There were no direct effects of internalized cultural demand on generative action ($CR = -1.21$) and competence ($CR = -.99$). Yet there were indirect effects of internalized cultural demand on generative action via generative concern (indirect effects range between .22 and .30) as well as on competence via generative concern (indirect effects range between .19 and .23).

Finally, in the model on autonomy, internalized cultural demand significantly predicted generative concern ($CR = 9.22$, $p < .001$; β s ranging from .33 to .41). Also, analyses verified significant links between generative concern and autonomy ($CR = 2.80$, $p < .01$; β s ranging from .17 to .26) and generative action ($CR = 15.00$, $p < .001$; β s ranging from .63 to .74), respectively. Furthermore, there is a significant negative path linking generative action and autonomy ($CR = -2.02$, $p < .05$; β s ranging from $-.17$ to $-.13$). Overall, there is a pronounced negative indirect effect of generative concern on autonomy via generative action (indirect effects range from $-.12$ to $-.08$). Again, the direct path from internalized cultural demand and generative action did not reach level of significance ($CR = -1.23$). Yet there is a noticeable indirect effect between internalized cultural demand and generative action via generative concern (indirect effects range between .22 and .30). Finally, the direct path between internalized cultural demand and autonomy is significant ($CR = 3.32$, $p < .001$; β s ranging from .14 to .23). The indirect

Table 3
Fit Indices of the Unconstrained, the Measurement Weights, and the Structural Weights Models on Facets of Generativity and Their Link to Need Satisfaction

Model	χ^2	<i>df</i>	CFI	RMSEA	AIC (saturated: 840)
Relatedness					
Unconstrained	465.29	284	.961	.027	737.29
Measurement weights	516.54	314	.956	.028	728.54
Structural weights	554.25	332	.952	.028	730.25
Competence					
Unconstrained	506.69	284	.950	.030	778.69
Measurement weights	563.95	314	.944	.031	775.95
Structural weights	588.85	332	.943	.030	764.85
Autonomy					
Unconstrained	510.98	284	.947	.031	782.98
Measurement weights	568.05	314	.940	.031	780.05
Structural weights	614.49	332	.934	.032	790.49

Note. Number of parameters to be estimated: 136 (unconstrained model); 106 (measurement weights model); 85 (structural weights model). *df* = degrees of freedom; CFI = comparative fit index; RMSEA = root mean square error of approximation; AIC = Akaike information criterion.

⁶ With respect to indirect effects, Cohen (1988) defines small, medium, and large effect sizes as .01, .09, and .25.

effect between both variables via generative concern ranges from .04 to .07.⁷

Additional Analyses

As we hypothesized psychological need satisfaction to be the final outcome of generativity, we tested whether individuals' age, level of education, gender, and partnership status affected their level of relatedness, competence, and autonomy. Thus, we examined effects of sociodemographic characteristics by analyses of covariance (ANCOVA) for the total sample. For each of the need satisfaction scales, we computed an ANCOVA with gender and partnership status as factors, and age and level of education as covariates.

Gender, $F(1, 840) = 9.71, p < .01, \eta^2 = .01$, and partnership status $F(1, 840) = 4.09, p < .05, \eta^2 = .005$, had significant but rather weak effects on relatedness: Female participants ($M = 4.54, SD = .87$) reported more relatedness than male participants ($M = 4.41, SD = .77$), and participants who were in a steady relationship ($M = 4.49, SD = .81$) reported more relatedness than participants who were single ($M = 4.48, SD = .88$). With respect to competence, there was only an effect of age $F(1, 840) = 65.56, p < .001, \eta^2 = .07$: The older the participants were, the less competence they reported ($r = -.29$). Finally, participants who were single ($M = 4.49, SD = .85$) reported slightly more autonomy than participants who were in a steady relationship ($M = 4.15, SD = .84$), $F(1, 840) = 11.83, p < .01, \eta^2 = .01$. No other main effect or interaction was significant (η^2 s $< .005$) in any of the three ANCOVAs. We reran the hybrid models on need satisfaction with effects of sociodemographic characteristics partialled out. However, findings were exactly in line with the ones reported in the previous section.

Discussion

The present study has three main results: First, there was an indirect effect of internalized cultural demand on generative action through generative concern. Second, in addition to a direct effect of generative concern on need satisfaction, there also were indirect effects of generative concern on need satisfaction through generative action. Interestingly, these indirect effects were positive for the needs for relatedness and competence, but negative for the need for autonomy. Third, these patterns were equivalent in samples from cultural contexts as diverse as Cameroon, China (Hong Kong), the Czech Republic, and Germany.

The generativity model proposed by [McAdams and de St. Aubin \(1992\)](#) specifies that cultural demand is a source of generative concern. However, previous analyses of cultural demand for generativity have focused on how cultures differ in their construction of a generative life course ([de St. Aubin, 2004](#)) without directly assessing cultural demand for generativity. Hence, the present study is the first to empirically support the assumption that internalized cultural demand for generativity indeed predicts generative concern.

The present study employed self-transcendence values as a measure of internalized cultural demand for generativity. It is interesting that despite individual and cultural differences in the importance assigned to specific value types—benevolence and universalism—that is, those value types that make up the value

dimension of Self-Transcendence, are the most important value types across heterogeneous cultural samples (see [Schwartz & Bardi, 2001](#)). That probably is a result of their adaptive function in maintaining close social relations and societal bonds: All cultures require their adult members to care for their junior ones, so values that initiate a willingness to do so should be highly esteemed in all cultures. It fits this image that self-transcendence values are regarded as anxiety-free growth-oriented values in Schwartz's theory ([Schwartz et al., 2012](#)): The cultural demand that is embedded in the internalization of these values initiates the development of generative concern. Although this is in line with [McAdams and de St. Aubin's \(1992\)](#) model of generativity, the direct effect of cultural demand on generative action that the model postulates did not find support in the present analyses.

Values thus seem to play a dual role in generativity: On the one hand, as the present results demonstrate, they are a source of generativity. On the other hand, they also are the content of the generative process in that generative adults pass on their values to the next generation. Indeed, generative parents are more successful in their value transmission to their children than less generative parents ([Pratt, Norris, Hebblethwaite, & Arnold, 2008](#); see also [Peterson, 2006](#)). Future research might shed some light on this dual role of values in generativity.

As suggested by previous research (e.g., [Busch & Hofer, 2012](#); [Hofer et al., 2008](#)), generative concern was associated with well-being, which was specified in this study from a eudaemonic perspective as satisfaction of the needs for relatedness, competence, and autonomy. These basic needs proposed in self-determination theory show substantial overlap with three dimensions of psychological well-being used in previous studies on generativity: positive relations with others, environmental mastery, and autonomy, respectively (for a full description of the psychological well-being scales, see [Ryff, 1989](#)). Although some studies employed a composite score of psychological well-being ([Keyes & Ryff, 1998](#)), the present approach offers a more detailed view on how generativity affects well-being.

Generative concern predicted satisfaction of all three needs, which is in line with results reported by [Grossbaum and Bates \(2002](#); cf. [An & Cooney, 2006](#)). In addition to this direct effect, there was an indirect effect of generative concern on need satisfaction through generative action. The relationship between generative action and well-being has already been subject to discussions, as it is generally lower than that between generative concern and well-being (e.g., [Grossbaum & Bates, 2002](#)). One explanation is that generative action is an investment of resources in others' well-being and might thus have indirect effects on the generative actor's well-being, at best, by positive reactions of the recipient of the generative efforts ([Keyes & Ryff, 1998](#)). Unfortunately, this explanation has not yet been tested empirically, for example, by manipulating the gratitude a recipient of generative efforts shows (cf. [Cheng's, 2009](#), analysis of effects of perceived ingratitude on generative concern).

Still, the present finding that the indirect effects of generative concern on need satisfaction through generative action were dif-

⁷ Rerunning SEM analyses without the nonsignificant path between self-transcendence and generative action did not result in findings differing from the ones reported in text.

ferent for relatedness and competence, on the one hand, and autonomy, on the other hand, might support the idea. Generative behavior contributes to the feeling of competence in that people experience themselves as effective in their environment; it contributes to the feeling of relatedness, in that people experience themselves as valuable part of a social network. However, generative behavior might also entail some self-denial, in that the issues that need to be resolved are determined by the recipient of the generative action—that is, the generative person might feel restricted in how to invest their resources by the needs he or she perceives in the recipient. This would mean that generative action is more of a trade-off between the satisfaction of different needs than to date had been uncovered with rather global measures of well-being. Future research is urgently needed to shed more light on the relationship between generative action and well-being and the potential trade-off that generative action involves.

Of course—and here we come to the limitations of the present research—such research on the relationship between generative action and well-being should ideally have a longitudinal design to disentangle the temporal sequence of effects. Moreover, the present study established the differential effects of generative action on need satisfaction only for the elderly. Interestingly, Grossbaum and Bates (2002) found environmental mastery, which is similar to the satisfaction of the need for competence, to be negatively—albeit insignificantly—correlated with generative action in their sample of adults who were, on average, 25 years younger than the participants of the present study. Perhaps generative action contributes differentially to the satisfaction of basic needs across the life span. In this respect, it needs to be acknowledged that because of more physical limitations (e.g., decreased mobility), older adults may well be more constrained in their generative actions than younger adults, and need satisfaction via generative behavior might thus be more tenuous for them. Generally, a classification of generative action as was suggested by Kotre (1996) might be helpful in predicting which specific action contributes to the satisfaction of which need. For example, research has shown that some generative efforts are more agentic, whereas others are more communal (Newton, Herr, Pollack, & McAdams, 2014), and this difference might reflect in the needs they satisfy. Observations of actual generative behavior would also be helpful in this respect. The low internal consistency of the need satisfaction measure might be circumvented in future research by employing the new scales that were recently suggested by Sheldon and Hilpert (2012). Finally, the present study operationalized cultural demand for generativity as self-transcendence values. That is, the extent to which certain values are internalized was measured. Alternatively, one could ask how typical one thinks these values are for the cultural context one lives in (Fischer, 2006). This, then, would allow examining how individuals perceive cultural demands for generativity and what effects such a perceived external press toward generativity has.

Despite these limitations, the present study contributes to our knowledge on generativity in manifold ways: First, it breaks new grounds in generativity research by suggesting an operationalization of internalized cultural demand for generativity through self-transcendence values. Second, although generally confirming the positive association between generative concern and generative action, it shows that these two constructs are differentially related to need satisfaction. That is, it suggests that more fine-grained

measures of well-being are preferable for gaining insight into how generativity affects well-being. Third, it demonstrates that the associations between internalized cultural demand for generativity, generative concern, generative action, and need satisfaction are equivalent across cultural contexts as diverse as Cameroon, China (Hong Kong), the Czech Republic, and Germany. This is evidence that the model of generativity is generalizable to a great extent.

References

- An, J. S., & Cooney, T. (2006). Psychological well-being in mid to late life: The role of generativity development and parent-child relationships across the lifespan. *International Journal of Behavioral Development, 30*, 410–421. <http://dx.doi.org/10.1177/0165025406071489>
- Arnett, J. J. (2008). The neglected 95%: Why American psychology needs to become less American. *American Psychologist, 63*, 602–614. <http://dx.doi.org/10.1037/0003-066X.63.7.602>
- Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling, 9*, 78–102. http://dx.doi.org/10.1207/S15328007SEM0901_5
- Bellah, R. N., Madsen, R., Sullivan, W. M., Swidler, A., & Tipton, S. M. (1992). *The good society*. New York, NY: Knopf.
- Bentler, P. M., & Chou, C.-P. (1987). Practical issues in structural modeling. *Sociological Methods & Research, 16*, 78–117. <http://dx.doi.org/10.1177/0049124187016001004>
- Busch, H., & Hofer, J. (2012). Self-regulation and milestones of adult development: Intimacy and generativity. *Developmental Psychology, 48*, 282–293. <http://dx.doi.org/10.1037/a0025521>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling, 14*, 464–504. <http://dx.doi.org/10.1080/10705510701301834>
- Cheng, S. T. (2009). Generativity in later life: Perceived respect from younger generations as a determinant of goal disengagement and psychological well-being. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 64B*, 45–54. <http://dx.doi.org/10.1093/geronb/gbn027>
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233–255. http://dx.doi.org/10.1207/S15328007SEM0902_5
- Clark, M., & Arnold, J. (2008). The nature, prevalence and correlates of generativity among men in middle career. *Journal of Vocational Behavior, 73*, 473–484. <http://dx.doi.org/10.1016/j.jvb.2008.09.002>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York, NY: Academic Press.
- Cox, K. S., Wilt, J., Olson, B., & McAdams, D. P. (2010). Generativity, the big five, and psychosocial adaptation in midlife adults. *Journal of Personality, 78*, 1185–1208.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268. http://dx.doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory on human motivation, development, and health. *Canadian Psychology, 49*, 182–185. <http://dx.doi.org/10.1037/a0012801>
- de St. Aubin, E. (2004). The propagation of genes and memes: Generativity through culture in Japan and the USA. In E. de St. Aubin, D. P. McAdams, & T.-C. Kim (Eds.), *The generative society: Caring for future generations* (pp. 63–82). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10622-005>
- Erikson, E. H. (1963). *Childhood and society* (2nd ed.). New York, NY: Norton.
- Erikson, E. H. (1982). *The life cycle completed*. New York, NY: Norton.
- Erikson, E. H., Erikson, J. M., & Kivnick, H. Q. (1986). *Vital involvement in old age*. New York, NY: Norton.

- Fischer, R. (2006). Congruence and functions of personal and cultural values: Do my values reflect my culture's values? *Personality and Social Psychology Bulletin*, 32, 1419–1431. <http://dx.doi.org/10.1177/0146167206291425>
- Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion*, 27, 199–223. <http://dx.doi.org/10.1023/A:1025007614869>
- Grossbaum, M. F., & Bates, G. W. (2002). Correlates of psychological well-being at midlife: The role of generativity, agency and communion, and narrative themes. *International Journal of Behavioral Development*, 26, 120–127. <http://dx.doi.org/10.1080/01650250042000654>
- Hart, H. M., McAdams, D. P., Hirsch, B. J., & Bauer, J. J. (2001). Generativity and social involvement among African Americans and white adults. *Journal of Research in Personality*, 35, 208–230. <http://dx.doi.org/10.1006/jrpe.2001.2318>
- Hofer, J., & Busch, H. (2011). Satisfying one's needs for competence and relatedness: Consequent domain-specific well-being depends on strength of implicit motives. *Personality and Social Psychology Bulletin*, 37, 1147–1158. <http://dx.doi.org/10.1177/0146167211408329>
- Hofer, J., Busch, H., Au, A., Poláčková Šolcová, I., Tavel, P., & Tsien Wong, T. (2014). For the benefit of others: Generativity and meaning in life in the elderly in four cultures. *Psychology and Aging*, 29, 764–775. <http://dx.doi.org/10.1037/a0037762>
- Hofer, J., Busch, H., Bond, M. H., Campos, D., Li, M., & Law, R. (2010). The implicit power motive and sociosexuality in men and women: Pancultural effects of responsibility. *Journal of Personality and Social Psychology*, 99, 380–394. <http://dx.doi.org/10.1037/a0020053>
- Hofer, J., Busch, H., Chasiotis, A., Kärtner, J., & Campos, D. (2008). Concern for generativity and its relation to implicit pro-social power motivation, generative goals, and satisfaction with life: A cross-cultural investigation. *Journal of Personality*, 76, 1–30. <http://dx.doi.org/10.1111/j.1467-6494.2007.00478.x>
- Johnston, M. M., & Finney, S. J. (2010). Measuring basic needs satisfaction: Evaluating previous research and conducting new psychometric evaluations of the Basic Needs Satisfaction in General Scale. *Contemporary Educational Psychology*, 35, 280–296. <http://dx.doi.org/10.1016/j.cedpsych.2010.04.003>
- Jowell, R., & the Central Coordinating Team. (2007). *European Social Survey 2006/2007 (Technical Reports)*. London, UK: Centre for Comparative Social Surveys, City University.
- Keyes, C. L. M., & Ryff, C. D. (1998). Generativity in adult lives: Social structural contours and quality of life consequences. In D. P. McAdams & E. de St. Aubin (Eds.), *Generativity and adult development: How and why we care for the next generation* (pp. 227–263). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10288-007>
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York, NY: Guilford Press.
- Kotre, J. (1996). *Outliving the self: How we live on in future generations*. New York, NY: Norton.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151–173. http://dx.doi.org/10.1207/S15328007SEM0902_1
- Mbaku, J. M. (2005). *Culture and customs of Cameroon*. Westport, CT: Greenwood Press.
- McAdams, D. P. (2001). Generativity in midlife. In M. Lachman (Ed.), *Handbook of midlife development* (pp. 395–443). New York, NY: Academic Press.
- McAdams, D. P., & de St. Aubin, E. (1992). A theory of generativity and its assessment through self-report, behavioral acts, and narrative themes in autobiography. *Journal of Personality and Social Psychology*, 62, 1003–1015. <http://dx.doi.org/10.1037/0022-3514.62.6.1003>
- McAdams, D. P., Hart, H. M., & Maruna, A. S. (1998). The anatomy of generativity. In D. P. McAdams & E. de St. Aubin (Eds.), *Generativity and adult development: How and why we care for the next generation* (pp. 7–43). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10288-001>
- McAdams, D. P., de St. Aubin, E., & Logan, R. L. (1993). Generativity among young, midlife, and older adults. *Psychology and Aging*, 8, 221–230. <http://dx.doi.org/10.1037/0882-7974.8.2.221>
- Neugarten, B. L., Moore, J. W., & Lowe, J. C. (1965). Age norms, age constraints, and adult socialization. *AJS; American Journal of Sociology*, 70, 710–717. <http://dx.doi.org/10.1086/223965>
- Newton, N. J., Herr, J. H., Pollack, J. I., & McAdams, D. P. (2014). Selfless or selfish? Generativity and narcissism as components of legacy. *Journal of Adult Development*, 21, 59–68. <http://dx.doi.org/10.1007/s10804-013-9179-1>
- Nunnally, J. C. (1978). *Psychometric theory*. New York, NY: McGraw-Hill.
- Peterson, B. E. (2004). Guarding the next generation: The politics of generativity. In E. de St. Aubin, D. P. McAdams, & T.-C. Kim (Eds.), *The generative society: Caring for future generations* (pp. 195–209). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10622-012>
- Peterson, B. E. (2006). Generativity and successful parenting: An analysis of young adult outcomes. *Journal of Personality*, 74, 847–870. <http://dx.doi.org/10.1111/j.1467-6494.2006.00394.x>
- Peterson, B. E., Smirls, K. A., & Wentworth, P. A. (1997). Generativity and authoritarianism: Implications for personality, political involvement, and parenting. *Journal of Personality and Social Psychology*, 72, 1202–1216. <http://dx.doi.org/10.1037/0022-3514.72.5.1202>
- Pratt, M. W., Norris, J. E., Hebblethwaite, S., & Arnold, M. L. (2008). Intergenerational transmission of values: Family generativity and adolescents' narratives of parent and grandparent value teaching. *Journal of Personality*, 76, 171–198. <http://dx.doi.org/10.1111/j.1467-6494.2007.00483.x>
- Rothrauff, T., & Cooney, T. M. (2008). The role of generativity in psychological well-being: Does it differ for childless adults and parents? *Journal of Adult Development*, 15, 148–159. <http://dx.doi.org/10.1007/s10804-008-9046-7>
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069–1081. <http://dx.doi.org/10.1037/0022-3514.57.6.1069>
- Schoklitsch, A., & Baumann, U. (2012). Generativity and aging: A promising future research topic? *Journal of Aging Studies*, 26, 262–272. <http://dx.doi.org/10.1016/j.jaging.2012.01.002>
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). Orlando, FL: Academic Press.
- Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50, 19–45. <http://dx.doi.org/10.1111/j.1540-4560.1994.tb01196.x>
- Schwartz, S. H. (2009). Culture matters: National value cultures, sources, and consequences. In R. S. Wyer, C.-Y. Chiu, & Y.-Y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 127–150). New York, NY: Psychology Press.
- Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures: Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, 32, 268–290. <http://dx.doi.org/10.1177/0022022101032003002>
- Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., . . . Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*, 103, 663–688. <http://dx.doi.org/10.1037/a0029393>
- Sheldon, K. M., & Hilpert, J. C. (2012). The balanced measure of psychological needs (BMPN) scale: An alternative domain general measure of

- need satisfaction. *Motivation and Emotion*, 36, 439–451. <http://dx.doi.org/10.1007/s11031-012-9279-4>
- Sheldon, K. M., & Kasser, T. (2001). Getting older, getting better? Personal strivings and psychological maturity across the life span. *Developmental Psychology*, 37, 491–501. <http://dx.doi.org/10.1037/0012-1649.37.4.491>
- Stewart, A. J., Ostrove, J. M., & Helson, R. (2001). Middle aging in women: Patterns of personality change from the 30s to the 50s. *Journal of Adult Development*, 8, 23–37. <http://dx.doi.org/10.1023/A:1026445704288>
- Togonu-Bickersteth, F. (1987). Chronological definitions and expectations of old age among young adults in Nigeria. *Journal of Aging Studies*, 1, 113–124. [http://dx.doi.org/10.1016/0890-4065\(87\)90002-8](http://dx.doi.org/10.1016/0890-4065(87)90002-8)
- United Nations, Department of Economic and Social Affairs, Population Division (2013). *World Population Ageing 2013*. ST/ESA/SER. A/348.
- van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Newbury Park, CA: Sage.
- Van Hiel, A., Mervielde, I., & De Fruyt, F. (2006). Stagnation and generativity: Structure, validity, and differential relationships with adaptive and maladaptive personality. *Journal of Personality*, 74, 543–574. <http://dx.doi.org/10.1111/j.1467-6494.2006.00384.x>
- Versey, H. S., Stewart, A. J., & Duncan, L. E. (2013). Successful aging in late midlife: The role of personality among college-educated women. *Journal of Adult Development*, 20, 63–75. <http://dx.doi.org/10.1007/s10804-013-9157-7>
- White, J. M. (1998). The normative interpretation of life course event histories. *Marriage & Family Review*, 27, 211–235. http://dx.doi.org/10.1300/J002v27n03_02
- World Health Organization. (2014). *Definition of an older or elderly person*. Retrieved from <http://www.who.int/healthinfo/survey/ageingdefnolder/en/>
- Zalewska, A. M., & Brandstätter, H. (2001). Value-motive congruence and reactivity as determinants of well-being. In H. Brandstätter & A. Elias (Eds.), *Persons, situations, and emotions: An ecological approach* (pp. 95–112). New York, NY: Oxford University Press.

Received March 20, 2015

Revision received October 1, 2015

Accepted October 6, 2015 ■