

# Concern for Generativity and Its Relation to Implicit Pro-Social Power Motivation, Generative Goals, and Satisfaction With Life: A Cross-Cultural Investigation

Jan Hofer,<sup>1</sup> Holger Busch,<sup>1</sup> Athanasios Chasiotis,<sup>1</sup> Joscha Kärtner,<sup>1</sup> and Domingo Campos<sup>2</sup>

<sup>1</sup>University of Osnabrück, Germany

<sup>2</sup>University of Costa Rica, Costa Rica

**ABSTRACT** So far, cross-cultural research on generativity has been lacking. The present study tests the cross-cultural applicability of an integrative model of generativity proposed by McAdams and de St. Aubin. Measures of implicit pro-social power motivation, a general disposition for generativity, generative goals, and life satisfaction were administered to adults in Cameroon, Costa Rica, and Germany. These measures cover the intrapersonal part of the generativity model. After examining the comparability of the measures across the three cultures, cultural differences in the level of each variable were inspected. Finally, the hypothesized model was tested via structural equation modeling. Results show that the model can be successfully applied in all three cultural samples. This finding has interesting implications for the further investigation of generativity, particularly its social antecedents and behavioral consequences.

The concept of generativity, introduced by Erik Erikson in his theory of psychosocial development, describes “the concern in establishing and guiding the next generation” (Erikson, 1963, p. 276), encompassing “everything that is generated from generation to generation: children, products, ideas, and works of art” (Evans, 1967, p. 51). The

This research was supported by a grant of the German Research Foundation to the first and third author (CH242/3-3).

Correspondence concerning this article should be addressed to Jan Hofer or Holger Busch, University of Osnabrück, Department of Human Sciences, Seminarstr. 20, D-49069 Osnabrück, Germany. E-mail: Jan.Hofer@uos.de; hobusch@uos.de.

*Journal of Personality* 76:1, February 2008

© 2007, Copyright the Authors

Journal compilation © 2007, Blackwell Publishing, Inc.

DOI: 10.1111/j.1467-6494.2007.00478.x

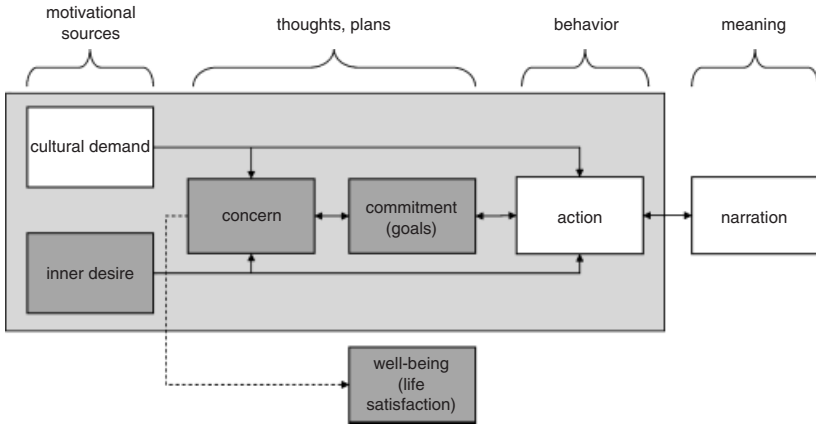
importance of the conflict of generativity versus stagnation in the life cycle is reflected in its duration (cf. Erikson, 1963, 1982) and generativity's function as an intergenerational bridge linking an adult individual's life cycle with that of a younger person (cf. Hoare, 2002). Despite its relevance for development, generativity has only recently moved into researchers' focus of attention (cf. Kotre, 1995). In particular, cross-cultural research on generativity is scarce: So far, studies exploring antecedents and consequences of generativity have exclusively been conducted in Western cultural context (see, however, de St. Aubin, 2004, & Yamada, 2004). In the present study, the concepts of generative disposition and goals and their relationship to implicit pro-social power motivation and subjective well-being are examined across different cultural groups.

To be able to make statements about the generalizability of any psychological theory or construct, cross-cultural research is indispensable. Although there is a clear trend toward detection of differences across cultures (Brouwers, Van Hemert, Breugelmans, & Van de Vijver, 2004), it is equally important to reveal similarities (Brown, 1991) to see whether, despite cultural variations, psychological constructs and hypothesized relationships between psychological constructs can be identified in humans universally. Testing universal assumptions cross-culturally, however, requires the selection of samples that represent a high degree of cultural diversity (e.g., self-construal; Markus & Kitayama, 1991). Such a wide variety is covered by our cultural samples, which were recruited in Sub-Saharan Africa (Cameroon), Latin America (Costa Rica), and Europe (Germany).

### *A Model of Generativity*

As early studies on generativity did not have a common tool to operationalize generativity, numerous different methodological approaches were undertaken, including coding interview material (e.g., Vaillant & Milofsky, 1980), conducting case studies (e.g., Peterson & Stewart, 1990), or using established questionnaires as proxies (e.g., Ryff & Migdal, 1984). Although all of these approaches yielded interesting and illuminating results, the variety of methods limits comparability of findings and makes it hard to integrate them into a coherent picture of generativity.

However, an integrative theoretical framework was provided by McAdams and de St. Aubin (1992; see also McAdams, Hart, &



**Figure 1**

**Model of generativity based on McAdams and de St. Aubin (1992).**

*Note.* Components in bold print are measured in the present study.

Maruna, 1998): They assume that generativity consists of six inter-related features (see Figure 1).<sup>1</sup> According to their model, generativity originates from two motivational sources. One of these is cultural demand, that is, culture-specific normative expectations of how to behave. For instance, it is argued that cultures determine in which way generativity is acted out and at what age members of the culture are to act in a generative manner (McAdams et al., 1998). It could be hypothesized that in societies in which interdependent self-construal dominates, i.e., people see themselves as embedded within a tight and larger social context as well as define themselves through social roles (Markus & Kitayama, 1991), the inclination to (inter)act generatively is particularly high. The second motivational source is an inner desire, i.e., the intrinsic need to behave in a certain manner. These sources feed a disposition (concern) for generativity, which initiates the setting of conscious generative goals (commitment). These goals, in turn, are put into practice in concrete generative behavior. Finally, people give meaning to their (generative) actions in

1. A seventh component, the so-called belief in the species (i.e., a conviction that generative behavior is worthwhile) is not considered here. This is due to the fact that there is hardly any research on this aspect (see Van de Water & McAdams, 1989, for an exception). Hence, for reasons of clarity and lucidity, this debatable part of the model is dropped.

the life stories they use to narrate their lives (see McAdams, 1985, 2003, for an introduction to life-story theory).

Prior research has verified the interrelations between the respective components as hypothesized in the model. For example, conceptualizing inner desire as implicit motivation (see McClelland, Koestner, & Weinberger, 1989), McAdams (1985) found that a combination of the intimacy and the power motive represents a good predictor of generative goals for the future. That is, the more somebody is motivated to experience warm, close, and communal exchange (*intimacy*; McAdams, 1992) while at the same time desiring to have an impact on others' behavior and/or emotion (*power*; Winter, 1973), the more likely that somebody is to report generative goals. In a similar vein, Peterson and Stewart (1993) found that implicit power motivation predicts various forms of generativity (e.g., number of children wanted, parental involvement).

At the heart of their generativity model, McAdams and de St. Aubin (1992) place generative concern, a general disposition for generativity. It is the first conscious manifestation of generativity in their theory. Empirical findings demonstrate that individuals with a pronounced generative concern have an authoritative parenting style and are highly politically active (Peterson, Smirles, & Wentworth, 1997). Generative concern results in the shaping of conscious generative goals, represented in the generativity model under the term of commitment (McAdams & de St. Aubin, 1992). Just as motives do, goals also energize and direct behavior (McClelland, 1987). Unlike implicit motivation, however, they predict behavior when the individual cognitively decides on a course of action. Cognitive by nature, goals are open to conscious reflection, which renders assessment via self-report questionnaires possible (Biernat, 1989). Generative goals have indeed been shown to be put into practice in actual behavior (McAdams, de St. Aubin, & Logan, 1993; Stewart & Vandewater, 1998). According to McAdams and colleagues (e.g., McAdams et al., 1998), such generative action can be categorized as creating (i.e., to bring something into existence), maintaining (i.e., to keep traditions alive, to nurture children), or offering (i.e., to give away what you have created). Generative behavior can occur in all domains of daily life, for example, in the work setting or in familial context.

Looking back on their lives and actions, McAdams (2003) claims, people create their individual life stories in order to provide their existence with a sense of coherence and meaning. Generativity seems

to play an important role in endowing lives with meaning as life stories of highly generative adults feature specific characteristics such as the transformation of negative events into positive outcomes (McAdams, Diamond, de St. Aubin, & Mansfield, 1997).

### *The Present Study*

The generativity model delineated above has, as has been shown, repeatedly been corroborated by empirical research. However, findings so far almost exclusively rely on correlational data obtained in studies comprising only two components of the model (for exceptions, see Grossbaum & Bates, 2002; McAdams et al., 1993). It is therefore of great interest whether the relations between the single aspects of generativity can indeed be established using the more sophisticated methodological approach of structural equation modeling (Byrne, 2001) as well. This study also tests whether the model's logic holds in Western and non-Western cultures as this would allow conclusions concerning its universality.

However, not all components included in the model are addressed in the present study: The analysis is restricted to those aspects that represent the intrapersonal psychological mechanism of generativity. Thus, to test whether the mental architecture of generativity is universal, interpersonal factors such as cultural demands and generative behavior were kept out of analysis. Therefore, the aspects included are inner desire, generative concern, and generative goals.

Life satisfaction, which is involved in the search for meaningfulness in one's life (Diener, Suh, Lucas, & Smith, 1999), was additionally entered into the model as an outcome of a pronounced generative disposition (see Figure 1). The rationale for this supplement was the following: Although being generative can, in general, be regarded as characteristic of adult psychosocial maturity (Kotre, 1996; Vaillant, 1977), not all aspects of generativity necessarily show an association with life satisfaction, which is the ultimate outcome of a successful, mature resolution of the generativity-stagnation conflict. A high inner desire for generativity, for example, can indeed lead to frustration if, for any reason whatsoever, it cannot be acted out properly (Peterson, 1998). A close link, however, has been identified for generative concern and life satisfaction: Positive associations were reported in several studies (e.g., de St. Aubin & McAdams, 1995; Grossbaum & Bates, 2002; McAdams et al.,

1993). These results are in line with Stewart and Vandewater's (1998) finding of positive correlations with measures of family satisfaction and overall health on the one hand, and negative correlations with measures of depression and anxiety on the other.

With respect to inner desire (implicit motivation), the present study focuses on participants' power motive. Whereas McAdams (1985) found that a motivational combination of power and intimacy predicts generative goals, it is assumed here that a particular type of realization of the power motive is associated with concern for generativity. There is considerable evidence that people realize their implicit need for impact and prestige (Winter, 1973) through different strategies and behaviors—that is, the power motive is channeled in either a pro-social (socialized power; e.g., membership in charities) or an antisocial direction (personalized power; e.g., profligate behavior; for dual nature of power, see McClelland, 1975; Winter, 1973). Thus, the motivational source of generative concern may not be represented by the overall strength of the power motive but rather by an individual's "disposition" to realize the need for power in a socially accepted way (e.g., giving help and advice to other people; see also Peterson & Stewart, 1996).

The basic hypothesis guiding this research is, then, that the intrapsychic structure of generativity is universal, that is, the same across the three cultures at hand. As shown in Figure 1, implicit pro-social power motivation feeds generative concern, which, in turn, facilitates the emergence of consciously set generative goals. Complementing McAdams and de St. Aubin (1992), we assume a direct association between life satisfaction and generative concern because the studies referred to above have provided evidence for such an association.

## METHOD

### *Sample*

*Selection of cultures.* The cultures included in this study represent a wide range regarding socioeconomic conditions as well as sociocultural orientations, norms, and values (e.g., individualism and power distance; Hofstede, 2001). Referring to socioeconomic characteristics, values of the Human Development Index (HDI; see United Nations Development Programme, 2004) on life expectancy, education, and Gross Domestic Product per person (GDP) indicate that the three nations markedly differ

from one another in these three essential criteria. Whereas Germany (HDI rank 19) and Costa Rica (HDI rank 45) are both listed among highly developed countries, Cameroon (HDI rank 141) shows a low developmental status.

As to prevalent sociocultural orientations, these are interwoven with self-construal (Markus & Kitayama, 1991). Kağıtçıbaşı (2005) introduced a theoretical framework that proposes the two distinct dimensions of agency and interpersonal distance to underlie self-construal. Based on this model, it has been argued that socialization patterns as expressions of cultural orientations reflect differences in individuals' self construal in Western and non-Western cultures (Greenfield, Keller, Fuligni, & Maynard, 2003). With respect to ethnic groups in the Western grass fields of Cameroon, Keller, Yovsi, Borke, Kärtner, Jensen, and Papaligoura (2004) show that parents stress obedience and respect toward parents and elders in child-rearing and socialization practices. The cultural environment emphasizes a communal agenda and hierarchical social stratification whereby children learn norms and roles as early as possible (see also Nsamenang & Lamb, 1995). Thus, members of the cultural group seem to be best characterized by holding an interdependent construal of themselves.

In contrast, an independent self is adaptive in industrialized Western cultures such as Germany, where children grow up in an environment with prevailing sociocultural orientations emphasizing individual distinctness and autonomy. Finally, an autonomous-related self is adaptive for Costa Ricans, who live in a traditionally interdependent society characterized by increasing urbanization, education, and affluence (Kağıtçıbaşı, 2005). Costa Ricans are described as valuing relatedness in family relationships, stressing closeness, respect, and harmony, although the enhanced standard of education supports autonomy (see Keller et al., 2004). Recent cross-cultural research on guiding principles in life (see Schwartz, 1992) matches well with these arguments: Whereas Cameroonian and Costa Rican participants put more stress on values that represent a concern for harmony in interpersonal and person-to-group relations by emphasizing self-restriction, preservation of customs, and protection of stability than did German participants, Germans and Costa Ricans reported more commitment to values that reflect a striving for autonomy and self-direction than did Cameroonians (Hofer, Chasiotis, Friedlmeier, Busch, & Campos, 2005).

*Participants.* As Cameroon is a multiethnic nation, we restricted the sampling of participants to ethnic Nso who are one of the largest ethnic groups in the Western grassfields located in the Northwest province (Anglophone part of Cameroon; see Yovsi, 2003) to control for cultural

differences among African participants. In total, data were collected from 566 participants, of whom 183 were from Cameroon, 193 from Costa Rica, and 190 from Germany.

Cultural samples were selected so as to be balanced concerning participants' gender and level of education. The entire sample included 288 female and 278 male participants. Referring to participants' level of education, 36.6% of the total sample ( $n = 207$ ) had less than secondary school education (number of female participants with low level of education were 34 in Cameroon, 27 in Costa Rica, and 28 in Germany) and 63.4% of the study participants ( $n = 359$ ) had either secondary school or university education (number of female participants with high level of education were 54 in Cameroon, 78 in Costa Rica, and 67 in Germany). Age of participants ranged from 22 to 65 years ( $M = 35.40$ ;  $SD = 9.36$ ). While women and men did not differ in mean age, Cameroonian participants ( $M = 31.13$ ;  $SD = 7.50$ ) were significantly younger than Costa Rican ( $M = 37.14$ ;  $SD = 9.90$ ) and German participants ( $M = 37.74$ ;  $SD = 9.06$ ;  $F_{2,563} = 31.33$ ;  $p < .01$ ). Altogether, 423 participants had a steady partner (married:  $n = 231$ ), and 143 participants stated that they were currently not engaged in a steady partnership (divorced or widowed:  $n = 61$ ). Two hundred fifty-nine of the study participants were childless, and 307 had at least one child (range: 1 to 9; total sample:  $M = 1.32$ ;  $SD = 1.58$ ).

### *Procedure*

Recruitment in Germany was done via ads in local newspapers or notes on blackboards of public buildings like shopping malls. In Cameroon and Costa Rica, participants were contacted with the help of local collaborators. All participants were volunteers. They were guaranteed that all information given would be treated confidentially and anonymously. German (20 US\$) and Cameroonian study subjects (2 US\$) received monetary compensation analogous to average differences in GDP per capita. Such compensation is not expected in Costa Rica and, for this reason, was not provided. In Cameroon and Costa Rica, data collection was conducted at the participants' homes; in Germany, it was mostly done on the premises of the university. A research assistant familiar with all instruments applied was present while the participant worked through questionnaires to help if any clarification questions should arise. All instruments were administered in either German (Germany), Spanish (Costa Rica), or English (Cameroon). Although English is not the native language, in the Northwest province of Cameroon where data were collected, it represents the official language and is exclusively used in educational institutions and predominantly so in everyday life (cf. Yovsi,



2003). Moreover, only very few people are able to read or write in Lamnso, the native tongue of the Nso and one of the colloquial languages in Cameroon.

### *Measurements*

Test methods were administered to participants individually by local research assistants. First, data on implicit motivation were assessed. Next, the questionnaire on life satisfaction was given to participants. Finally, information on generative goals and generative disposition was obtained. German and Cameroonian data on implicit motives and goals were coded by well-trained and experienced German raters, as were Costa Rican data after these were translated from Spanish to German by a bilingual research assistant (native Latin-American).

*Implicit pro-social power motivation.* Implicit motivation operates on the preconscious level and does not have any symbolic representation, but it is reflected in people's imagination and assessed using projective tests (Weinberger & McClelland, 1990). Hence, to measure implicit power motivation, a modification of the Thematic Apperception Test (TAT; Murray, 1938), the Operant Multi-Motive-Test (OMT; Kuhl, 2001; Kuhl & Scheffer, 2001) was administered: A set of ambiguous picture cues (sketches, blurred photographs) is presented to participants who are asked to imagine a story on each of the cues. Participants are not required to write down a complete story. They answer just three questions (simplified version of the OMT): What is important for the person in this situation and what is he/she doing? How does the person feel? Why does the person feel this way?<sup>2</sup>

Like the TAT, participants' responses are coded for presence of the three basic social motives: achievement, intimacy-affiliation, and power (cf. Winter, 1991). Unlike the TAT, however, in addition to the identification of a motive (only one motive per picture is coded), the predominant mode of motive realization, i.e., underlying cognitive system and mechanisms of affect regulation guiding motive realization, can also be specified (see Kuhl, 2001; Kuhl & Scheffer, 2001). The realization of each motive can either be positively or negatively affectively toned and either be grounded in the self or in external incentives (Kuhl, 2001; cf. Deci & Ryan, 1985).

For the power motive, this gives the following combinations: If a negatively toned power motive is combined with self-activation, it represents

2. A fourth question (How does the story end?) is additionally asked in the full version of the OMT.

self-assertion against resistance, while if self-activation is lacking, there is an inhibited mode of realization. A positively toned power motive based on external incentives is equivalent with an implicit striving for status, while a positively toned power motive stemming from the self is the implicit desire to guide others in a pro-social manner.<sup>3</sup> For our purposes, it is this lattermost configuration that is of particular interest as this mode of realization of the power motive is linked with unselfish help and support given to others (cf. a prototypical OMT response coded for pro-social power: Teaching and leading the young.—Feels patient.—As an elder or leader, he needs to guide the young.). As such, it is hypothesized that it should be this motive configuration that best reflects an implicit motivation predictive of generativity.

Behavioral correlates of the OMT and its convergent validity with the TAT can be found in Kuhl (2001; see also Baumann, Kaschel, & Kuhl, 2005; Kazén & Kuhl, 2005; Scheffer, Kuhl, & Eichstaedt, 2003). Its cross-cultural applicability has been tested along with a TAT picture set (Chasiotis & Hofer, 2004; Hofer et al., 2005). Thus, the 12 pictures used in the present study have proved to be applicable in measuring implicit power motivation and its specific modes of realization in Cameroon, Costa Rica, and Germany.

Participants' answers to picture cards were scored for power motivation by five experienced coders who had achieved percentage agreements of 85% or better in their responses to training material prescored by experts. Initially, the responses of 100 participants were scored by all five raters to examine agreement of codings for power. As inter-rater reliability was found to be sufficiently high—that is, for pro-social power kappas ( $\kappa$ ) ranged from .78 to .87, the remaining data sets were scored separately. However, coding difficulties were resolved by discussion in regular meetings. For the purpose of the present study, the sum of the pro-social component of the power motive was computed to assess the strength of the implicit motivation.

*Life satisfaction.* The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larson, & Griffin, 1985) was designed to quantify the cognitive aspect of well-being (cf. Waterman, 1993). It consists of five items that have to be rated on a 7-point Likert scale (1–7) with higher scores indicating higher life satisfaction. “In most ways my life is close to my ideal” is an exemplary item. This questionnaire has been widely used in psychological research on generativity (e.g., de St. Aubin & McAdams,

3. In addition to the four approach modes described above, the OMT also allows the coding of a passive-avoidance component for each motive (e.g., fear of powerlessness).

1995; McAdams et al., 1993) and in various cultures (e.g., Myers & Diener, 1995; Phinney & Ong, 2002). It was administered to participants in (official) first-language versions (for German and Spanish versions, see Schumacher, 2003, and Atienza, Pons, Balaguer, & García-Merita, 2000).

*Generative goals.* The personal striving approach is a well-established method of assessment of conscious goals (Emmons, 1986; Emmons & McAdams, 1991). It is an idiographic technique in which participants are asked to generate goals/strivings that guide their everyday behavior. For this purpose, the sentence fragment “I typically try to” is to be completed with a description of the specific goal. In the present study, participants were asked to provide 15 goals.

These strivings listed by any participants can be coded for presence of several categories (e.g., achievement, intimacy, generativity). Thus, the number of goals showing generative qualities is summed up. Criteria for the coding of generativity are given in McAdams et al. (1993) and specified by Emmons (2000). Examples of answers scored for generativity are “to help my children to become good persons” (Costa Rican woman), “to be a good role-model” (German man), and “to advise a young couple on family life” (Cameroonian woman). Data on personal strivings were scored for the domain of generativity by two well-trained coders who had reached sufficient reliability across several studies. In the study at hand, approximately 10% of data on personal strivings from each of the three cultural groups was scored by both coders. As inter-rater reliability for generativity strivings was found to be adequately high ( $\kappa = .85$ ), the remaining data sets were scored separately.

*Generative concern.* The Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992), a 20-item self-report questionnaire designed to measure a general disposition for generativity, was applied to assess generative concern. Participants respond to items such as “I try to pass along the knowledge I have gained through my experience” or “I have made many commitments to many different kinds of people, groups, and activities in my life” on a 4-point Likert scale (0–3). Higher scores indicate high approval of items. In the literature, high internal consistencies for the LGS are reported (e.g., Grossbaum & Bates, 2002; Peterson et al., 1997). Additionally, McAdams and de St. Aubin (1992) demonstrate high retest reliability (see also McAdams et al., 1993). The original English version was translated into Spanish by our collaboration partners in Costa Rica. A back-translation was made independently by a bilingual assistant in Germany. The accuracy of the translation was evaluated by comparing the original and backtranslated versions. Discrepancies in meaning were identified and resolved by the interpreters via discussion. A

similar approach was followed to develop the German version of the instrument (cf. Van de Vijver & Leung, 1997).

## RESULTS

In the following section we first review the equivalence of measurements across cultural groups. In this regard, we present analyses on bias of picture cards used for the assessment of implicit pro-social power motivation and on cross-cultural applicability of questionnaires (SWLS and LGS). Next, we will briefly present findings on cross-cultural differences and on how far personal characteristics (e.g., gender, age) relate to psychological measurements. Finally, the proposed intrapersonal psychological mechanisms concerning generativity across cultural groups were examined using multigroup structural equation modeling.

### *Equivalence of Measurements*

*Generative goals.* As the personal striving approach is an idiographic technique and was already successfully used in African, Asian, and Latin American cultures to code individuals' goals for their thematic content (e.g., Elliot, Chirkov, Kim, & Sheldon, 2001; Hofer et al., 2005; McAuley, Bond, & Ng, 2004; Sheldon et al., 2004), we could abstain from an examination of measurement equivalence.

*Implicit power motivation.* Bias analyses were conducted for the stimulus material used for eliciting implicit power motivation. As already stated, a 12-picture set was used in the present study, which proved to represent a valid tool for the assessment of implicit power motivation in the three cultural groups. Together with the TAT, the OMT was used in recent extended methodological studies that aimed to develop bias-free picture sets for implicit motive measurement in Cameroon, Costa Rica, and Germany. The methodological approach, which realized an integrated examination of construct, method, and item/picture bias (see Van de Vijver & Poortinga, 1997), is described by Hofer et al. (2005) considering the TAT as example. Referring to the OMT, the 12 cards were selected from a pool of 32 cards that were initially tested for applicability. However, it was decided to scrutinize data for picture bias with respect to the assessment of power

motivation again because knowledge on applicability of the OMT stimulus material in non-Western cultures is still limited.

Loglinear model analysis was used as a technique to identify bias. This method has proved to yield good results in the detection of biased dichotomous items, allows analyzing data from more than two groups (cultures) at the same time, and successfully identifies uniform and nonuniform bias (e.g., Kok, Mellenbergh, & Van Der Flier, 1985). In detail, loglinear modeling tests for each picture card the fit of nested models (one-way or two-way effects) to the observed frequencies in the cross-tabulation of categorical variables. Among hierarchically related models, the most parsimonious model that fits the data is preferable. A saturated model that would exactly match the observed frequencies includes all possible one-way and two-way effects, that is, score level, culture, and interaction of culture and score level. Therefore, a more parsimonious model fitting the data must be identified. An item shows no nonuniform bias when a model including score level and culture does fit the data. Furthermore, a fitting model that includes only score level indicates the absence of uniform bias, i.e., participants with the same overall score on average have the same score on an individual item irrespective of the culture they pertain to (Kok et al., 1985). Likelihood ratio chi-square was used as a test statistic for model evaluation. As recommended (e.g., Lord, 1980), an iterative strategy was used in bias analyses: After the identification of the most significantly biased item, new score levels and score groups were determined. The procedure was repeated until the set was free of items that are significantly different.

In the study at hand, participants' power motive scores (0 = no coding/1 = coding) were used as dependent variable. "Culture" and "score level" were the two factors. A preliminary screening of the cards' stimulus pull for power showed that one picture should be removed because of its low cue strength for the implicit need for power: Only the responses of 4.2% of the total sample ( $N = 24$ ) were scored for power (for the remaining 11 picture cards, the stimulus pull for power ranged from 17.8 to 81.3%). Thus, to obtain an estimator of the latent trait power codings (all five components) were summed across 11 picture cards (possible range: 0–11). Subsequently, two evenly sized score levels (low and high strength of motive) were differentiated.

In the first run of bias analyses, none of the cards was identified for nonuniform bias. However, three cards showed uniform bias. In the next step, the picture set was reduced by the most biased item ( $\chi^2 = 15.24$ ;  $p < .01$ ). Ability indices and score level groups were

recalculated and analyses were rerun. None of the remaining 10 picture cards proved to be biased (uniform and nonuniform) in analyses that followed. Thus, for subsequent analyses participants' scores for pro-social power were summed up across 10 picture cards.<sup>4</sup>

*Generative concern and life satisfaction.* We scrutinized data on generative concern and life satisfaction, respectively, for measurement invariance across cultural groups to guarantee that latent variables in the structural model on psychological mechanisms of generativity are psychometrically sound (see Byrne, 2001).

Preliminary exploratory factor analyses (principle component analysis) indicated that five items of the LGS should be excluded from further analyses because of moderate factor loadings in at least one of the cultural groups. In detail, the item "I believe that society cannot be responsible for providing food and shelter for all homeless people" did not show a significant factor loading in data sets from Cameroon (.11), Costa Rica (−.14), and Germany (−.06). Additionally, the item "I do not volunteer for a work for a charity" had modest magnitudes in the Costa Rican (−.02) and German samples (.10). Finally, three more items were excluded because they did not seem to be associated with the relevant psychological construct in the Costa Rican group: "I feel that I have done nothing that will survive after I die" (.12), "In general, my actions do not have a positive effect on others" (−.06), and "I feel as though I have done nothing of worth to contribute to others" (.08). Referring to the SWLS, preliminary factor analyses indicated that one item ("If I could live my life over, I would change almost nothing") should not be used as an indicator of life satisfaction because of its low factor loading (<.3) within the Cameroonian sample.<sup>5</sup>

4. Analyses on picture bias run for the implicit need for intimacy-affiliation indicated that the picture set, originally developed as measure of the implicit power motive, is not applicable for assessing data on intimacy affiliation: Eight pictures had to be removed because of low stimulus pull or item bias. Valid conclusions on the strength of the intimacy-affiliation motive can hardly be drawn on the basis of data on four pictures only (invalidation of the latent trait's estimator). Thus, and given our hypothesis that it is the implicit pro-social power motive that predicts generative disposition, the intimacy-affiliation motive was not considered here.

5. Similarly, an initial run of confirmatory factor analyses by the use of AMOS 5 pointed to the exclusion of identical items because of their nonsignificant regression weights.

In the next step, we tested for measurement equivalence of the reduced scales for concern for generativity (LGS) and life satisfaction (SWLS), respectively, across the cultural subsamples using multigroup confirmatory factor analysis (*AMOS 5*; Arbuckle, 2003). We used a modification of the two-step modeling procedure advocated by Kline (1998) for testing the measurement model and the structural model (see equivalence of psychological mechanisms) separately. In doing so, we first tested whether the measurement model held up by specifying a model including the LGS and SWLS scale.

We defined three increasingly restrictive measurement models: first, the unconstrained model with no equality constraints across cultural groups; second, the measurement-weights model where the measurement weights were constrained to be equal across all groups and the variances and covariance of the two latent scores were estimated separately for each group; finally, the structural covariance model in which the measurement weights and the variances and covariances of the two latent scores were constrained to be equal across all groups. Nested model comparisons (using chi-square difference tests) showed that the successive implementation of model constraints did not lead to a significant increment of the  $\chi^2$  statistic (unconstrained model:  $\chi^2 = 476.48$ ;  $df = (570 - 117) = 453$ ; unconstrained model—measurement weight model:  $\Delta\chi^2 = 30.94$ ;  $\Delta df = 34$ ;  $p = .61$ ; measurement weight model—structural covariance model:  $\Delta\chi^2 = 11.80$ ;  $\Delta df = 6$ ;  $p = .07$ ).<sup>6</sup> This means that we can assume measurement equivalence of questionnaires across the three cultural groups, which, in turn, allows us to interpret mean differences in generativity (LGS) and life satisfaction (SWLS) between cultural groups (see Van de Vijver & Leung, 1997).

From the perspective of multiple fit indices (see Bollen & Long, 1993), it was indicated that the specified structural covariance model adequately fit our data (see Table 1): The ratio  $\chi^2/\text{degrees of freedom}$  lay below the critical value of 2. The Goodness of Fit Index (*GFI*) was close to .90 and the Root Mean Square Error of Approximation (*RMSEA*) fell below .05. Also, the Akaike Information Criterion (*AIC*) and Expected Cross Validation Index (*ECVI*) of the default model lay below their corresponding parameters for the saturated model. The Cronbach's Alphas were .73 (Cameroon), .83 (Costa Rica), and .82

6. The factor loadings for generative concern ranged from .74 to .17 for Cameroon (life satisfaction: .74 to .48), from .65 to .29 for Costa Rica (life satisfaction: .87 to .73), and from .70 to .20 for Germany (life satisfaction: .81 to .71).

**Table 1**

Fit Indices of Measurement Model for LGS and SWLS (Structural Covariance Model), of Structural Path Model on Generativity (Structural Weights Model), and of Three Alternative Structural Weights Models

Model	$\chi^2$ ( <i>p</i> -level)	<i>df</i>	$\chi^2/df$	<i>GFI</i>	<i>RMSEA</i>	<i>AIC</i> (saturated)	<i>ECVI</i> (saturated)
Measurement	819.22 (.00)	493	1.66	.87	.03	973.22 (1140.00)	1.73 (2.02)
Structural Path	103.12 (.24)	94	1.10	.96	.01	185.12 (270.00)	.33 (.48)
Model A	102.90 (.23)	93	1.11	.96	.01	186.90	.33
Model B	102.68 (.23)	93	1.10	.96	.01	186.68	.33
Model C	110.61 (.17)	94	1.18	.96	.02	192.61	.34

(Germany) for the shortened LGS and .71 (Cameroon), .87 (Costa Rica), and .85 (Germany) for the SWLS (four-item scale).

*Cross-cultural differences in measurements.* In Table 2, descriptive statistics of measurements are presented. To examine cross-cultural differences, four univariate analyses of covariance (ANCOVA) with implicit power motivation, concern for generativity, generative goals, and life satisfaction, respectively, as dependent variables and culture as factor were conducted. In these analyses, age, gender, educational level, current partnership status, and number of children were included as covariates because past research indicated that these variables may have an influence on motivation (Winter, 1973), generativity (cf. McAdams & de St. Aubin, 1992), and well-being (Diener et al., 1999).

As can be seen in Table 2, analyses revealed pronounced cross-cultural differences with magnitudes of effect sizes that point to a medium and high effect of culture, respectively.<sup>7</sup> By testing simple

7. An effect-size measure for the strength of association between an independent variable and a dependent variable eta-squared ( $\eta^2$ ) is reported. According to Cohen (1988),  $\eta^2$ s of .01, .06, and .14 can be interpreted as small, medium, and large effect size, respectively.



**Table 2**  
 Descriptive Raw Statistics of Implicit Pro-Social Power, Generative Concern, Generative Goals, and Life Satisfaction for the Three Cultural Samples

Measurement <sup>1,2</sup>	Cameroon	Costa Rica	Germany	$F_{(2, 556)}$ ( $\eta^2$ )
	<i>M (SD)</i> <i>Min/Max</i>	<i>M (SD)</i> <i>Min/Max</i>	<i>M (SD)</i> <i>Min/Max</i>	
Pro-social Power	.66 <sub>a</sub> (.80) 0/4	.62 <sub>a</sub> (.82) 0/4	.27 <sub>b</sub> (.52) 0/3	13.14** (.05)
Generative Concern <sup>a</sup>	31.62 <sub>a</sub> (6.37) 12/45	28.03 <sub>b</sub> (7.60) 6/44	23.84 <sub>c</sub> (6.96) 8/43	51.85** (.16)
Generative Goals <sup>b</sup>	1.79 <sub>a</sub> (1.61) 0/8	1.29 <sub>b</sub> (1.39) 0/6	.80 <sub>b</sub> (.91) 0/4	19.22** (.06)
Life Satisfaction <sup>c</sup>	15.29 <sub>a</sub> (5.19) 4/26	20.82 <sub>b</sub> (5.34) 4/28	17.74 <sub>c</sub> (5.03) 4/28	50.95** (.15)

\*\* $p < .01$ .

*Note.* 1 = Due to the relatively weak or insignificant effects of covariates, differences between reported raw means and estimated means (adjusted for covariates) are negligible. 2 = Possible range of variables is 0 to 10 (implicit pro-social power), 0 to 45 (generative concern), 0 to 15 (generative goals), and 4 to 28 (life satisfaction).

<sup>a</sup> = Participants' age ( $F_{1, 556} = 8.05$ ;  $p < .01$ ) significantly confounded with concern for generativity.

<sup>b</sup> = Number of children ( $F_{1, 556} = 19.70$ ;  $p < .01$ ) and level of education ( $F_{1, 556} = 4.49$ ;  $p < .05$ ) significantly confounded with generative goals.

<sup>c</sup> = Level of education ( $F_{1, 556} = 8.92$ ;  $p < .01$ ) and engagement in a partnership ( $F_{1, 556} = 12.71$ ;  $p < .01$ ) significantly confounded with life satisfaction.

<sub>a, b, c</sub> = Different subscripts indicate significant differences ( $p < .01$ ).

main effects (with Bonferroni adjustment), it was found that Cameroonian and Costa Rican participants reported significantly higher mean levels of pro-social implicit power motivation than did German participants ( $p < .01$ ). Furthermore, Cameroonian participants scored higher for generative concern and generative goals than did Costa Rican and German study subjects ( $p < .01$ ). Finally, Costa Rican participants scored significantly higher than German participants in generative concern ( $p < .01$ ). The mean difference in generative goals was only marginally significant between the latter two cultural groups ( $p < .10$ ). With respect to satisfaction with life, the three cultural groups significantly differed from each other with Costa Rican participants

being the most satisfied, Cameroonian participants the least satisfied, and German participants positioned in between ( $p < .01$ ).

With respect to covariates, it was shown that none of the variables had a significant effect on implicit power motivation. A number of weak but still significant effects of covariates were found in analyses on generative concern, generative goals, and life satisfaction: Participants' age was positively related to generative concern ( $\eta^2 = .01$ ), and highly educated individuals formulated less generative goals ( $\eta^2 < .01$ ) and indicated higher life satisfaction ( $\eta^2 = .01$ ). ANCOVAs indicated only two pronounced associations between a covariate and a dependent variable: Participants' number of children showed a significant effect on generative goals ( $\eta^2 = .03$ ), and current engagement in a partnership was significantly related with level of life satisfaction ( $\eta^2 = .02$ ). Subsequent analyses verified that a higher number of children was significantly correlated with generative goals ( $r = .33$ ;  $p < .01$ ) and that participants who reported to have a steady partner ( $M = 18.40$ ;  $SD = 5.70$ ) were more satisfied with their life than participants who were single ( $M = 16.82$ ;  $SD = 5.34$ ;  $t = 2.91$ ;  $p < .01$ ).

### *Equivalence of Psychological Mechanisms*

Since the equivalence of measures across cultural groups was supported in analyses, we tested the proposed structural model. As outlined above, we assumed that implicit pro-social power motivation represents a source for generative concern, which, in turn, leads to the pursuance of generative goals and gives a sense of satisfaction with life.

In this multigroup model, implicit pro-social power motivation (POW) and generative goals (GEN), respectively, were represented by single-item indicators. We used the full four-item scale for estimating the SWLS score and item parcels for the LGS scale. As the measurement model approved the unidimensionality of LGS in all three samples, item parceling is an appropriate means for reducing measurement error and optimizing the measurement structure of constructs in SEM procedures (e.g., Bandalos, 2002). For building parcels (three parcels with five items each), we used random assignment resulting in homogenous samples that were similar in variance.

Again, we defined and compared different models, evaluating their adequacy using chi-square difference tests. First, we started with the unconstrained model. Second, we defined the measurement-weights

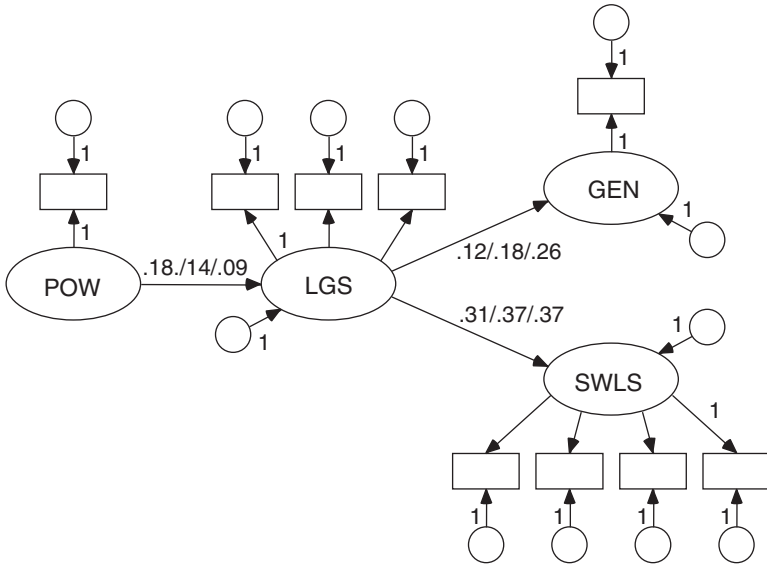
model in which all measurement weights were set to be equal across groups, but structural weights and variances of the latent scores were estimated separately for each group. Third, we specified the structural-weights model in which all measurement weights and, additionally, the three structural weights were constrained to be equal across groups (and the variances of the latent scores were estimated separately for each group).

Nested model comparisons showed that the successive implementation of model constraints did not lead to a significant increment of the  $\chi^2$  statistic (unconstrained model:  $\chi^2 = 84.24$ ;  $df = (135 - 57) = 78$ ; unconstrained model–measurement-weight model:  $\Delta\chi^2 = 8.32$ ;  $\Delta df = 10$ ;  $p = .60$ ; measurement-weight model–structural weights model:  $\Delta\chi^2 = 10.57$ ;  $\Delta df = 6$ ;  $p = .10$ ). Based on these results as well as the good fit indices of the third model (e.g.,  $GFI = .96$ ;  $RMSEA = .01$ ; see Table 1), we can conclude that the structural relations between the latent concepts inherent in the model of generativity are identical across cultural groups.

Referring to the structural weights model, all structural parameter estimates were statistically significant (critical ratio  $> 1.96$ ; see Figure 2) with critical ratios (CR) ranging from 2.95 to 6.72. In detail, there was a significant relationship between implicit pro-social power motivation and generative concern (CR = 2.96;  $p < .01$ ;  $\beta$ s: .18 for Cameroon, .14 for Costa Rica, and .09 for Germany). Furthermore, generative concern was a significant predictor of both, generative goals (CR = 4.23;  $p < .01$ ;  $\beta$ s: .12 for Cameroon, .18 for Costa Rica, and .26 for Germany) and satisfaction with life (CR = 6.72;  $p < .01$ ;  $\beta$ s: .31 for Cameroon, .37 for Costa Rica, and .37 for Germany). According to Kline (1998), the magnitude of the standardized parameter estimates and the percentage of variance explained in each endogenous variable (concern for generativity 1% to 3%; generative goals: 2% to 7%; life satisfaction: 10% to 14%) indicated small to medium effects within our model.<sup>8</sup>

To further examine the quality of our model, three alternative models were tested. For example, a model with an additional direct path from power motivation to life satisfaction (Model A) was tested because some of the effects in our theoretically deduced causal chain

8. Covariance matrices of all measured variables, separately by cultural group, for each of the two sets of structural equation models are available from the first author upon request.



**Figure 2**

**Structural model on psychological mechanisms of generativity.**

*Note.* POW = Implicit pro-social power motivation. LGS = Generative concern. GEN = Generative goals. SWLS = Life satisfaction. Values of structural weights are given in the following order: Cameroon, Costa Rica, and Germany.

might be due to direct effects between nonadjacent concepts that are not taken into account in the model. Similarly, one might argue that there are significant direct effects that could better be explained by a potential moderator. Thus, we expanded our original model and imposed an additional path linking generative goals and life satisfaction to test whether the direct effect of generative concern on life satisfaction might partly be due to a direct effect of generative goals on life satisfaction (Model B). A statistical examination of both models indicated that they adequately fit our data. However, structural weight model comparisons showed that our proposed model was not inferior to both alternative models (comparison with Model A:  $\Delta\chi^2 = .22$ ;  $\Delta df = 1$ ;  $p = .64$ ; comparison with Model B:  $\Delta\chi^2 = .44$ ;  $\Delta df = 1$ ;  $p = .51$ ), i.e., the paths from power motivation to life satisfaction (Model A; CR =  $-.47$ ;  $p = .64$ ) and from generative goals to life satisfaction (Model B; CR =  $.67$ ;  $p = .51$ ), respectively, were not significant.

Finally, we examined a model with a different order of generative concern and generative goals, i.e., testing whether an inner desire for power motivation feeds generative goals, which in turn, lead to a higher concern for generativity (Model C). Even if fit indices indicated a comparably good fit of the model across cultures, the structural path linking power motivation to generative goals was not significant ( $CR = .56$ ;  $p = .58$ ; for fit indices of alternative models see Table 1).

## DISCUSSION

The main objective of the present study was to expand the research on generativity by examining whether the psychological mechanisms of the model proposed by McAdams and de St. Aubin (1992) can successfully be identified in other cultures as well.

To do so, we first had to test the cross-cultural applicability of the measures. This was particularly relevant for the OMT and the LGS as these instruments, unlike the Personal Strivings and the SWLS, have scarcely, if ever, been employed in non-Western cultures. With regard to the OMT, it can be said that after the removal of only 2 out of 12 picture cues, a bias-free stimulus set for the assessment of implicit power motivation was available. Thus, we have a broad basis of data on implicit motivation upon which to ground our statements concerning the model's component of inner desire. The LGS was reliably cross-culturally applicable after five items were excluded from the scale.

As we could verify that measurements of variables used in the structural path model were psychometrically sound, it can be suggested that findings on the relations among constructs in the hypothesized theoretical model are valid (see Byrne, 2001). Thus, the psychological mechanisms of generativity are the same in the cultures under examination in this study.

The reasoning of the generativity model supported by the present findings is as follows: Implicit pro-social power motivation serves as a basis for generative concern, which, in turn, leads to conscious generative goals as well as life satisfaction. That is, a pronounced desire to have a positive impact on other people's emotions or behavior is turned into a generative disposition, which itself has important consequences: On the one hand, it determines to what extent

the individual generates generative goals. On the other hand, generative concern has a direct link to global life satisfaction (cf. correlational studies by de St. Aubin & McAdams, 1995; Grossbaum & Bates, 2002).

It is noteworthy that there is no such link between actual generative behavior and life satisfaction; correlations between these generally are low. This may be due to the fact that generative acts consume resources that are invested not in one's own but in others' well-being (de St. Aubin & McAdams, 1995; Keyes & Ryff, 1998). What kind of positive effects generative behavior yields has yet to be identified; a connection with the feeling of having a purpose in life, however, could not be verified (Grossbaum & Bates, 2002). Taking these results together, it might well be that generative action is the not most relevant predictor of well-being but that it suffices to develop a general psychological readiness for generativity (i.e., generative concern) to gain the satisfaction of the developmental task successfully resolved. This reasoning is analogous to research on identity. Here, too, no specific action is required, but an intrapsychic development takes place (cf. Marcia, 1980). These assumptions are only hypothetical and need empirical investigation, however.

In sum, the findings of the present study confirm the theoretical approach to the research on generativity as proposed by McAdams and colleagues (McAdams & de St. Aubin, 1992; McAdams et al., 1998). The results are additionally corroborated by the testing of alternative models. As theoretically important paths failed to reach significance after modifications were undertaken, this also shows that the sequence of effects (power motivation feeding generative disposition determining generative goals as well as life satisfaction) is correctly specified by the generativity model.

The high cross-cultural reliability of the instruments also allowed us to test for differences on the relevant measures between the three cultural groups. In those analyses, a consistent pattern emerges: Cameroonian participants show significantly more generative goals and higher generative concern than do German and Cost Rican participants. Moreover, Costa Ricans reveal higher levels on these two variables than Germans. This is in line with theoretical assumptions as there should be a much stronger emphasis on generativity in collectivistic than in individualistic cultures. It is in this context that cultural expectations come into play. For example, there are

differences in socialization practices between cultures with a collectivist versus individualist orientation such as the quantity of socialization agents (Greenfield et al., 2003; Nsamenang, 1992). As in collectivist societies, nonrelatives such as neighbors are expected to take part actively in child care, people are expected to be psychologically ready to fulfill this obligation. As such, members of collectivist cultures develop more generative concern and formulate more generative goals that are helpful, if not required, for a positive interaction with children in one's care. However, individualist societies also need generative disposition and goals to deal with important political issues (e.g., child care) and to keep the social fabric intact (Peterson, 2004). Increasing individualization might lead to lessened investment in coming generations, thus threatening intergenerational links (i.e., relationship between generations) and important sources of well-being in old age.

For the implicit pro-social power motivation, German participants score significantly lower than Cameroonian and Costa Rican subjects, possibly because in collectivist cultures such as Cameroon and Costa Rica, children are taught cultural norms and values as early as possible (Keller et al., 2004). Moreover, the probability of having younger siblings is higher in collectivist cultures as families in such cultures, on average, have more children. Having siblings has been argued to influence the development of a pro-social power motive as it is an important responsibility training (Whiting & Whiting, 1975; Winter & Barenbaum, 1985).

Only for satisfaction with life, the differences across cultures turn out differently. Here, the highest level is achieved by the Costa Ricans, while the Germans rank between the other samples. Cameroonians score lowest, even when effects of covariates (e.g., age, gender, level of education) were partialled out. As in other studies, in the present sample, sociodemographic characteristics (education, partnership status) are moderately related to life satisfaction (for a discussion of the influence of sociodemographic variables see Argyle, 1999; Diener et al., 1999). These cultural differences in life satisfaction are not surprising because the SWLS measures a global cognitive evaluation of well-being. That is, a successful resolution of the generativity crisis is only a fraction of all the influences constituting global satisfaction with life. Thus, even though scoring highest on generative concern, there are other factors that diminish life satisfaction in Cameroon in comparison to Costa Rica and Germany.

The most obvious are differences in affluence and availability of resources (UNDP, 2004; cf. Diener & Oishi, 2000).

### *Limitations and Future Perspectives*

Although consistent with theoretical assumptions, the results presented here have to be interpreted with some care as this is the first attempt systematically to apply the generativity model and the measures recommended by McAdams and colleagues (McAdams et al., 1998) in non-Western societies. This causes methodological problems such as adequate translations of questionnaires. As there is no official version of the LGS in German or Spanish, for example, the items had to be translated from the American original first. Nevertheless, as bilingual, trained experts were entrusted with the respective translations, it is unlikely that, due to this fact, some items did not function equally across the three cultures. Besides, two of these items show very low or even negative factor loadings with the rest of the scale in at least two cultures. As Germany, the individualist culture in our sample and thus the most comparable to the United States where the LGS was originally developed, is among these two cultures, it seems that these items belong to the periphery of the very broad and heterogeneous concept of generativity. With the remaining items, it is conspicuous that the other items that were negatively poled statements, might be more difficult to answer correctly (cf. Barnard, Wright, & Wilcox, 1979).

Besides, not all aspects of the model were included in the present investigation. We abstained from assessing generative behavior in this context as cultural equivalence of behavior has not been established yet. The same basic disposition could be expressed differently in different cultures (cf. Maehr, 1974). As they seem to be rather time consuming, autobiographical narrations were excluded because of economic reasons and because the generativity model designates narration as following behavior for which it provides meaning. Hence, excluding behavior is equivalent to removing the link to autobiographical narration.

There also is an important substantial objection: McAdams's (1985) findings suggest that it is an interaction of intimacy and power needs that lead to generativity in goals—that is, intimacy has a taming effect on power (Langner & Winter, 2001). In the present study, we focused solely on the power motive. Rather than examining the



interaction of two independent motives, we hypothesized and actually identified more specific aspects of the power motive to be relevant for the development of generative concern. But exploring how other motives, particularly the need for intimacy, might influence generative concern and goals is advisable nonetheless, as the prosocial component of the power motive might not be the only significant motivational source of generativity.

A replication of the present research project and an expansion on other (for instance, Asian) cultures is highly desirable. Nevertheless, the findings reported here prove a cross-cultural investigation of generativity to be very fruitful as the intrapsychic part of the generativity model holds across such diverse cultural settings as Germany, Costa Rica, and Cameroon. Thus, having verified the basic intrapersonal structure, what now is needed is a thorough examination of specific cultural influences (i.e., constraints, opportunities) and culturally different interpretations of which behavioral act qualifies as truly generative.

## REFERENCES

- Arbuckle, J. L. (2003). *AMOS (Version 5)*. Chicago: SmallWaters Corporation.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 353–373). New York: Sage.
- Atienza, F. L., Pons, D., Balaguer, I., & García-Merita, M. (2000). Propiedades psicométricas de la escala de satisfacción con la vida en adolescentes (Psychometric properties of the satisfaction with life scale among adolescents). *Psicothema*, *12*, 331–336.
- Bandalos, D. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling*, *9*, 78–102.
- Barnard, P. J., Wright, P., & Wilcox, P. (1979). Effects of response instructions and question style on the ease of completing forms. *Journal of Occupational Psychology*, *52*, 209–226.
- Baumann, N., Kaschel, R., & Kuhl, J. (2005). Striving for unwanted goals: Stress-dependent discrepancies between explicit and implicit achievement motives reduce subjective well-being and increase psychosomatic symptoms. *Journal of Personality and Social Psychology*, *89*, 781–799.
- Biernat, M. (1989). Motives and values to achieve: Different constructs with different effects. *Journal of Personality*, *57*, 69–95.
- Bollen, K. A., & Long, J. S. (1993). *Testing structural equation models*. Newbury Park, CA: Sage.

- Brouwers, S. A., Van Hemert, D. A., Breugelmans, S. M., & Van de Vijver, F. J. R. (2004). A historical analysis of empirical studies published in the Journal of Cross-Cultural Psychology 1970–2004. *Journal of Cross-Cultural Psychology*, *35*, 251–262.
- Brown, D. E. (1991). *Human universals*. New York: McGraw-Hill.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Chasiotis, A., & Hofer, J. (2004). *Abschlussbericht zum DFG-Projekt "Die Messung impliziter Motive in Deutschland, Costa Rica und Kamerun—Methodische Voruntersuchungen zu einer kulturinformierten Motivationspsychologie."* (Final report for the DFG-project "The measurement of implicit motives in Germany, Costa Rica, and Cameroon—Methodological examinations for a culture-informed motivational psychology.") University of Osnabrück.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- 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.
- De St. Aubin, E., & McAdams, D. P. (1995). The relation of generative concern and generative action to personality traits, satisfaction/happiness with life, and ego development. *Journal of Adult Development*, *2*, 99–112.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–75.
- Diener, E., & Oishi, S. (2000). Money and happiness: Income and subjective well-being across nations. In E. Diener & E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 185–218). Cambridge, MA: MIT Press.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302.
- Elliot, A. J., Chirkov, V., Kim, Y., & Sheldon, K. M. (2001). A cross-cultural analysis of avoidance (relative to approach) personal goals. *Psychological Science*, *12*, 505–510.
- Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, *51*, 1058–1068.
- Emmons, R. A. (2000). *Striving coding manual*. University of California.
- Emmons, R. A., & McAdams, D. P. (1991). Personal strivings and motive dispositions: Exploring the links. *Personality and Social Psychology Bulletin*, *17*, 648–654.
- Erikson, E. H. (1963). *Childhood and society* (2nd rev. ed). New York: Norton.
- Erikson, E. H. (1982). *The life cycle completed: A review*. New York: Norton.
- Evans, R. I. (1967). *Dialogue with Erik Erikson*. New York: Harper & Row.
- Greenfield, P. M., Keller, H., Fuligni, A., & Maynard, A. (2003). Cultural pathways through universal development. *Annual Review of Psychology*, *54*, 461–490.

- 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.
- Hoare, C. H. (2002). *Erikson on development in adulthood: New insights from the unpublished papers*. New York: Oxford University Press.
- Hofer, J., Chasiotis, A., Friedlmeier, W., Busch, H., & Campos, D. (2005). The measurement of implicit motives in three cultures: Power and Affiliation in Cameroon, Costa Rica, and Germany. *Journal of Cross-Cultural Psychology*, **36**, 689–716.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations cross cultures*. Thousand Oaks, CA: Sage.
- Kağıtçıbaşı, C. (2005). Autonomy and relatedness in cultural context: Implications for self and family. *Journal of Cross-Cultural Psychology*, **36**, 403–422.
- Kazén, M., & Kuhl, J. (2005). Intention memory and achievement motivation: Volitional facilitation and inhibition as a function of affective contents of need-related stimuli. *Journal of Personality and Social Psychology*, **89**, 426–448.
- Keller, H., Yovsi, R., Borke, J., Kärtner, J., Jensen, H., & Papaligoura, Z. (2004). Developmental consequences of early parenting experiences: Self-recognition and self-regulation in three cultural communities. *Child Development*, **75**, 1745–1760.
- 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.
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Kok, F. K., Mellenbergh, G. J., & Van Der Flier, H. (1985). Detecting experimentally induced item bias using the iterative logit method. *Journal of Educational Measurement*, **22**, 295–303.
- Kotre, J. (1995). Generative outcome. *Journal of Aging Studies*, **9**, 33–41.
- Kotre, J. (1996). *Outliving the self: How we live on in future generations*. New York: Norton.
- Kuhl, J. (2001). *Motivation und Persönlichkeit. Interaktionen psychischer Systeme* (Motivation and personality. Interactions of psychological systems). Göttingen: Hogrefe.
- Kuhl, J., & Scheffer, D. (2001). *Der operante Multi-Motiv-Test—OMT: Manual* (The operant multi-motive-test—OMT: Manual). University of Osnabrück.
- Langner, C. A., & Winter, D. G. (2001). The motivational basis of concessions and compromise: Archival and laboratory studies. *Journal of Personality and Social Psychology*, **81**, 711–727.
- Lord, F. M. (1980). *Applications of item response theory to practical testing problems*. Hillsdale, NJ: Erlbaum.
- Maehr, M. L. (1974). Culture and achievement motivation. *American Psychologist*, **29**, 887–896.
- Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology* (pp. 159–187). New York: John Wiley & Sons.

- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, **98**, 224–253.
- McAdams, D. P. (1985). *Power, intimacy, and the life story: Personological inquiries into identity*. Homewood, IL: Dorsey Press.
- McAdams, D. P. (1992). The intimacy motive. In C. P. Smith (Ed.), *Motivation and personality: Handbook of thematic content analysis* (pp. 224–228). New York: Cambridge University Press.
- McAdams, D. P. (2003). Identity and the life story. In R. Fivush & C. A. Haden (Eds.), *Autobiographical memory and the construction of a narrative self: Developmental and cultural perspectives* (pp. 187–207). Mahwah, NJ: Lawrence Erlbaum Associates.
- 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.
- McAdams, D. P., de St. Aubin, E., & Logan, R. L. (1993). Generativity among young, midlife, and older adults. *Psychology and Aging*, **8**, 221–230.
- McAdams, D. P., Diamond, A., de St. Aubin, E., & Mansfield, E. (1997). Stories of commitment: The psychosocial construction of generative lives. *Journal of Personality and Social Psychology*, **72**, 678–694.
- 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.
- McAuley, P. C., Bond, M. H., & Ng, I. W.-C. (2004). Antecedents of subjective well-being in working Hong Kong adults. *Journal of Psychology in Chinese Societies*, **1**, 25–49.
- McClelland, D. C. (1975). *Power: The inner experience*. New York: Irvington.
- McClelland, D. C. (1987). *Human motivation*. New York: Cambridge University Press.
- McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How do self-attributed and implicit motives differ? *Psychological Review*, **96**, 690–702.
- Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.
- Myers, D. G., & Diener, E. (1995). Who is happy? *Psychological Sciences*, **6**, 10–19.
- Nsamenang, A. B. (1992). *Human development in context: A third world perspective*. Newbury Park: Sage.
- Nsamenang, A. B., & Lamb, M. E. (1995). The force of beliefs: How the parental values of the Nso of Northwest Cameroon shape children's progress toward adult models. *Journal of Applied Developmental Psychology*, **16**, 613–627.
- Peterson, B. E. (1998). Case studies of midlife generativity: Analyzing motivation and realization. In D. P. McAdams & E. de St. Aubin (Eds.), *Generativity and adult development: How and why we care for the next generation* (pp. 101–131). Washington, DC: American Psychological Association.
- 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.
- Peterson, B. E., Smirles, 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.
- Peterson, B. E., & Stewart, A. J. (1990). Using personal and fictional documents to assess psychosocial development: A case study of Vera Brittain's generativity. *Psychology and Aging*, **5**, 400–411.
- Peterson, B. E., & Stewart, A. J. (1993). Generativity and social motives in young adults. *Journal of Personality and Social Psychology*, **65**, 186–198.
- Peterson, B. E., & Stewart, A. J. (1996). Antecedents and contexts of generativity motivation at midlife. *Psychology and Aging*, **11**, 24–33.
- Phinney, J. S., & Ong, A. D. (2002). Adolescent-parent disagreements and life satisfaction in families from Vietnamese and European American backgrounds. *International Journal of Behavioral Development*, **26**, 556–561.
- Ryff, C. D., & Migdal, S. (1984). Intimacy and generativity: Self-perceived transitions. *Signs*, **9**, 470–481.
- Scheffer, D., Kuhl, J., & Eichstaedt, J. (2003). Der Operante Motiv-Test (OMT): Inhaltsklassen, Auswertung, psychometrische Kennwerte und Validierung (The operant motive test (OMT): Contents, scoring, psychometric values, and validation). In J. Stiensmeier-Pelster & F. Rheinberg (Eds.), *Diagnostik von Motivation und Selbstkonzept (Diagnostic of motivation and self-concept)* (pp. 151–167). Göttingen: Hogrefe.
- Schumacher, J. (2003). SWLS—Satisfaction with Life Scale. In J. Schumacher, A. Klaiberg, & E. Brähler (Eds.), *Diagnostische Verfahren zu Lebensqualität und Wohlbefinden, Diagnostik für Klinik und Praxis, Band 2* (Diagnostic methods for quality of life and well-being: Clinical and practical diagnostics, Vol. 2) (pp. 305–309). Göttingen: Hogrefe.
- 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.
- Sheldon, K. M., Elliot, A. J., Ryan, R. M., Chirkov, V., Kim, Y., & Demir, M. (2004). Self-concordance and subjective well-being in four cultures. *Journal of Cross-Cultural Psychology*, **35**, 209–223.
- Stewart, A. J., & Vandewater, E. A. (1998). The course 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. 75–100). Washington, DC: American Psychological Association.
- United Nations Development Programme (2004). *Human development report 2004—Cultural liberty in today's diverse world*. New York: Hoechstetter Printing Co.
- Vaillant, G. E. (1977). *Adaptation to life*. Cambridge: Harvard University Press.
- Vaillant, G. E., & Milofsky, E. (1980). Natural history of male psychological health: Empirical evidence for Erikson's model of the life cycle. *American Journal of Psychiatry*, **137**, 1348–1359.

- Van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Thousand Oaks, CA: Sage.
- Van de Vijver, F. J. R., & Poortinga, Y. H. (1997). Towards an integrated analysis of bias in cross-cultural assessment. *European Journal of Psychological Assessment*, **13**, 29–37.
- Van de Water, D. A., & McAdams, D. P. (1989). Generativity and Erikson's "belief in the species." *Journal of Research in Personality*, **23**, 435–449.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, **64**, 678–691.
- Weinberger, J., & McClelland, D. C. (1990). Cognitive versus traditional motivational models. Irreconcilable or complementary? In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Vol. 2. Foundations of social behavior* (pp. 562–597). New York: Guilford Press.
- Whiting, B., & Whiting, J. W. M. (1975). *Children of six cultures: A psycho-cultural analysis*. Cambridge, MA: Harvard University Press.
- Winter, D. G. (1973). *The power motive*. New York: Free Press.
- Winter, D. G. (1991). *Manual for scoring motive imagery in running text*. University of Michigan.
- Winter, D. G., & Barenbaum, N. B. (1985). Responsibility and the power motive in women and men. *Journal of Personality*, **53**, 335–355.
- Yamada, Y. (2004). The generative life cycle model: Integration of Japanese folk images and generativity. In E. de St. Aubin, D. P. McAdams, & T.-C. Kim (Eds.), *The generative society: Caring for future generations* (pp. 97–112). New York: Academic Press.
- Yovsi, R. D. (2003). *Ethnotheories about breastfeeding and mother-infant interaction*. Münster, Germany: LIT Verlag.