

# Is Self-Determined Functioning a Universal Prerequisite for Motive–Goal Congruence? Examining the Domain of Achievement in Three Cultures

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**ABSTRACT** Research has shown that capacity for accessing implicit motives promotes congruence between the implicit and the explicit motivational system: Individuals able to test a conscious goal for its fit with their implicit motivation commit themselves more fully to self-congruent goals. However, it has not yet been shown whether this is a universal phenomenon or limited to Euro-American cultures in which individual needs are less strictly constrained by the social environment than in other cultural contexts. Thus, the present study examined whether self-determination interacts with the implicit achievement motive to predict how much importance individuals from Cameroon, Germany, and Hong Kong ascribe to achievement goals. Moreover, the importance ascribed to goals should indirectly predict life satisfaction via success in goal realization. Results showed that the associations described above are valid in all three cultural groups and are discussed in terms of their implications for the universal processes characterizing motivation.

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Recently, motivational psychology has witnessed an increased interest in the intricate interplay between preconsciously represented needs and conscious goals, not the least because of findings revealing the close connection between motivational congruencies and discrepancies and well-being. The present study substantially adds to that line of research by investigating dispositional predictors of motive-goal congruence in a cross-cultural setting with nonstudent adult samples. Thus, present findings surpass the scope of generalizability usually found in studies on this topic. Moreover, they potentially challenge existing points of view on the role of culture in individuals' goal setting.

### The Two Motivational Systems

For a long time, psychologists have been puzzled about the generally low associations of motives as measured by techniques such as the Thematic Apperception Test (TAT; Morgan & Murray, 1935) or other variations of the Picture-Story Exercise (PSE) and the same motive when measured via self-reports. However, McClelland, Koestner, and Weinberger (1989) proposed a theory that satisfyingly explained those recurring findings: They suggested that there are two independent motivational systems, implicit and explicit motives.

The implicit motivational system develops in early childhood and thus is not consciously represented or accessible. Hence, it has to be measured indirectly. The inner needs that make up the implicit motivational system are affective preferences for certain situations (e.g., those that allow the individual to act competitively). As such, they guide long-term behavioral trends and outcomes (McClelland, 1987).

The explicit motivational system develops later in childhood and is thus cognitively represented and measurable with self-reports. This system contains the goals, values, and personal projects that a person would attribute to him- or herself. These elements can be drawn upon when the individual decides on which behavior to show in a given situation.

However, it is not necessarily the case that the two motivational systems match well in their content. That is, whereas some individuals strive to achieve goals that are highly congruent with their implicit needs, others commit themselves to goals that are not in line with their inner needs (e.g., Brunstein, 2001; Deci & Ryan, 1985).

### The Congruence of the Two Motivational Systems

The correlates of a loose or close alignment of implicit motives and conscious goals have been examined in a number of recent studies. For example, it has been shown that a discrepancy between the implicit and the explicit achievement motive is associated with poor well-being and pronounced psychosomatic symptoms in both healthy and patient samples (Baumann, Kaschel, & Kuhl, 2005). Similarly, motivational discrepancies negatively relate to well-being through an impairment of volitional capacities (Kehr, 2004).

On the other hand, a close alignment of implicit and explicit motives is associated with a variety of beneficial outcomes. Brunstein, Schultheiss, and Grässmann (1998) showed that goal-related progress predicted increased emotional well-being only when these goals are congruent with the implicit motivational system. Related effects could be demonstrated in non-Western cultures, too. Zambian adolescents who were pursuing goals matching their implicit motivational structure reported higher life satisfaction (Hofer & Chasiotis, 2003). The same result was obtained in a study examining adult samples from Germany, Costa Rica, and Cameroon (Hofer, Chasiotis, & Campos, 2006). Moreover, congruence of the two motivational systems predicts a more mature identity development (Hofer, Busch, Chasiotis, & Kiessling, 2006).

Thus, beneficial concomitants of motivational congruence on well-being are relatively well established. If so, it becomes crucial to identify those variables that determine whether a given individual pursues goals that are well aligned or misaligned with his or her implicit motivational system.

### Moderators of the Congruence of the Two Motivational Systems

Recent studies on the alignment of motivational systems have either highlighted the importance of sensory experience of affective incentives for implicit motives or examined the role of particular personality dispositions. Referring to the former, Schultheiss and Brunstein (1999) showed that vividly imagining the emotional satisfaction that would be gained by the pursuit of a given goal increases goal-related achievement if the given goal is need congruent. Langens (2002) provided evidence that daydreaming about achieving one's goals predicts actual goal attainment. These imaginary exercises and processes described by Schultheiss and Brunstein and Langens represent experiential tests of a goal's fit with one's inner needs, thus

corroborating McClelland et al.'s (1989) assumption "that through self-observation . . . greater congruence between the two types of motives can be achieved" (p. 700).

Examining which personality characteristics moderate congruence of motivational systems, Brunstein (2001) was able to show that people with a dispositionally strong self-access, that is, action-oriented individuals, have a higher tendency to commit themselves to need-congruent goals. Similarly, Baumann et al. (2005) demonstrated that, in state-orientated individuals, that is, those with dispositionally poor abilities to gain access to their self, stress induction increases motive discrepancies. Moreover, Langens (2007) argued that motive congruence turns into well-being only when activity inhibition, that is, the disposition to not follow motivational impulses, is low. Thus, giving rein to one's intuition, which stems from the self-system, fosters the beneficial effect of motive congruence.

Focusing specifically on the achievement domain of motivation, different personality traits, for example, the ability to perceive and correctly interpret bodily sensations, were identified as moderators of motivational congruence (Thrash, Elliot, & Schultheiss, 2007). Additionally and of particular relevance for the present study, self-determination, defined as a traitlike, enduring aspect of personality that reflects being aware of the self's needs and grounding decisions of whether to give way to behavioral impulses relating to this awareness (Sheldon & Deci, 1993), was highlighted. Thrash and Elliot (2002) reported that self-attributed achievement motives of individuals high in self-determination were more attuned to their deeply rooted implicit need for achievement, presumably because they use affect-based inclinations as a guide when developing explicit motives (Thrash et al., 2007).

Taken together, these studies suggest that individuals vary in their capacity to access preconsciously represented motives. Thus, people who do not have access to their inner needs cannot test how congruent any given goal really is with their implicit motivational system, sometimes even confusing goals that were imposed upon them with those they chose themselves (Kuhl & Kazén, 1994).

### The Present Research

We hypothesize that individuals' disposition toward self-determination cross-culturally is a decisive component of congruence between the two motivational systems, thus examining the question of how

universal the relationship of peoples' tendency to function in a self-determined way and their motive-goal congruence is. Moreover, data from respondents from widely different cultural traditions would ultimately make it possible to draw conclusions on the universality of phenomena of goal attainment and well-being.

To our knowledge, this issue has never before been studied across cultures. This is unfortunate, insofar as it is widely assumed that cultural differences in the importance of social reference groups have an impact on which conscious goals people pursue and which values they endorse. Cultures differ in basic knowledge traditions (Chiu & Hong, 2007) and, thus, show marked differences in the extent to which individuals define themselves as distinctive and unique or in terms of group belongings and in relation to others (Markus & Kitayama, 1991). This contrast in accessible knowledge structures that reflects itself in the individual's basic cultural orientation has consequences for conscious motivation: Because values and goals are highly socialized (McClelland et al., 1989), in various cultures they are prescribed by significant others in different degrees.

Despite this surface diversity in cultural norms and values, however, there are certain invariant aspects of human nature, such as basic dispositions, needs, and psychological processes (Chirkov, Ryan, Kim, & Kaplan, 2003; Chiu & Hong, 2007; McCrae & Allik, 2002). For example, individuals in all cultures have affective preferences, that is, implicit motives, which, even if shaped by their cultural context of acquisition, can function as a reference in determining how satisfying any given goal pursuit becomes. Additionally, the disposition for self-determined functioning may be a universal facet of human personality.

Although there is an evident trend toward detection of cultural variation in psychological phenomena (Brouwers, Van Hemert, Breugelmans, & van de Vijver, 2004), it is equally important to reveal similarities and to discover whether, despite wide cultural variations, basic principles in human functioning that help to predict individuals' mental processes and observable behaviors can be identified in humans universally (Hofer & Bond, 2008). Thus, in line with Chiu and Hong (2007), we accept that behavior, as affected by normative sociocultural demands such as role obligations and communication styles, may vary across cultures, but we challenge the idea that culture-bound experiences per se result in variability in basic psychological mechanisms or processes.

While accepting the position that an individual's striving is strongly conditioned by sociocultural norms that define what is socially desirable and good or socially undesirable and bad, we propose that significant facets of personality, that is, implicit needs and the disposition toward self-determination, play a decisive role in the process of individuals' goal commitment. In other words, the present study rests on the assumption that, in non-Western cultural settings, introspective insight into one's inner needs plays the same role in the alignment of consciously represented goals and implicit motives as in Western cultural contexts, despite the fact that, in non-Western cultural contexts, explicit motives are to a lesser extent freely chosen but are more strongly socially imposed.

Additionally, we assume that, across cultures, similar relationships between goal importance, goal success, and life satisfaction can be found. Even if not central to the present study, mean differences in psychological measurements across samples groups will be examined. As validity of those analyses, however, strongly depends on the equivalence of measurements across groups, we abstain from hypothesizing about such differences at this stage.

## METHOD

In the following section, we first refer to the systematic sampling of the cultural groups that were included in the present study. Next, we provide basic sociodemographic information about participants and describe significant aspects of the data collection. Finally, essential details on measurement instruments are given. In this context, particular attention is given to the equivalence of measurements across cultural samples.

### Samples

#### *Theory-Guided Sampling of Cultural Groups*

When the primary objective of a study is to look for universal patterns among psychological constructs, cultural samples ought to be included that are as different as possible. Such a design allows a strong claim for universality, if similar relationships among constructs can be obtained (Van de Vijver & Leung, 1997). Thus, data were collected in Cameroon, Germany, and Hong Kong because these cultures represent a wide range of socioeconomic conditions (e.g., Human Development Index; see United Nations Development Programme, 2004) as well as psychological characteristics. For example, diversity between cultural samples at hand has been illustrated with respect to individualism/collectivism and power distance (Hofstede,

2001), general worldviews (Bond et al., 2004), socialization patterns and sociocultural orientations (Kärtner et al., 2008), which are interwoven with self-construals at the individual level (Markus & Kitayama, 1991). Thus, various psychological constructs typically used in cross-cultural research have yielded convincing evidence for differences between the cultural groups that were selected for data collection.

In the study at hand, we refer to another extensively used psychological construct, that is, values or guiding principles in life (Schwartz, 1992, 1994) that show substantial overlap with other cultural markers at the national and individual level (e.g., Triandis, 1996). Research has revealed pronounced differences in guiding principles in life between Western (e.g., Germany) and non-Western cultural groups (e.g., Cameroon and Hong Kong). For example, participants raised in non-Western cultures 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 interpersonal harmony than do Western participants (e.g., Hofer, Busch, Chasiotis, Kärtner, & Campos, 2008).

Furthermore, values that reflect a striving for independence, autonomy, and self-direction are more and more appreciated in those non-Western contexts characterized by increasing urbanization, education, and affluence. This situation is highly descriptive of Hong Kong Chinese participants: Socialization patterns emphasize relatedness in family relationships and stress closeness, respect, and harmony, although the enhanced standard of education and high proportion of women in tertiary education support autonomy (Stewart, Bond, Deeds, & Chung, 1999). To test whether these assumptions on cultural distinctions hold true and appropriately describe our samples, values were analyzed to ensure that subsequent analyses do not rest on erroneous conceptions about the cultural groups under investigation.

It should be noted that autonomy is differently conceptualized in the research literature. In cross-cultural psychology, the construct of autonomy (or independence) is typically used to label an individual's tendency to make choices independently from social expectations (e.g., Greenfield, Keller, Fuligni, & Maynard, 2003). Autonomy with an emphasis on individual rights, choices, and opportunities is defined as a desired developmental outcome and is thus fostered by parenting strategies in Western industrialized contexts (Keller, 2007).

In contrast, autonomy is defined as a basic human need by other scholars (Deci & Ryan, 1985). According to this view, autonomy concerns the degree to which one fully accepts and endorses one's actions and lifestyle regardless of the type of cultural orientation sanctioned in a given cultural context; for example, an individual can abandon his or her independence by depending on others for guidance and support but still feel a sense of autonomy if the behavior is experienced as willingly enacted and mirroring authentic inter-

ests and integrated values (Chirkov et al., 2003). When describing criteria for selecting cultural samples, autonomy is understood as a cultural orientation.

### *Participants*

Because Cameroon is a multiethnic nation, sampling of participants was restricted to ethnic Grassfield Bantus from the Anglophone North-West province (see Nsamenang & Lamb, 1995). In light of ongoing migration, only participants born in Germany and Hong Kong, respectively, were included in the other two cultural samples.

In Table 1, participants' demographic information is given separately for each cultural sample. In total, data were collected from 633 participants, 280 from Cameroon, 112 from Hong Kong, and 241 from Germany. The entire sample included 341 female and 292 male participants. Age of participants ranged from 22 to 63 years ( $M = 35.20$ ,  $SD = 7.56$ ). Although women and men did not differ in their mean age, Cameroonian participants were slightly younger than German participants,  $F(2, 629) = 9.52$ ,  $p < .001$ ,  $\eta^2 = .03$ .<sup>1</sup> Participants' level of formal education was assessed by a four-stage scale, that is, low ( $n = 84$ ; e.g., primary school education or less), medium ( $n = 189$ ; e.g., ordinary school certificate in Cameroon), high ( $n = 187$ ; e.g., matriculation in Hong Kong), and university degree level ( $n = 171$ ).

### **Procedure**

Recruitment in Germany was done via ads in local newspapers or notes at public blackboards. In Cameroon and Hong Kong, participants were contacted with the help of local collaborators. All participants voluntarily participated in the study and were guaranteed that all information would be treated confidentially and anonymously. All participants received monetary compensation. With amounts corresponding to average differences in GDP per capita, study subjects received US\$20 in Germany, US\$12 in Hong Kong, and US\$2 in Cameroon. Measurements were administered to participants individually by research assistants. Cameroonian and Chinese participants were visited at their homes, and in Germany data collection was conducted on the premises of the university.

In Hong Kong and Germany, measurements were given in the mother tongue of participants. In Cameroon, English was used in data collection because it is the official language in the Anglophone North-West Province

1. Eta-squared is reported as an index of the strength of association between an independent variable and a dependent variable;  $\eta^2$ s of .01, .06, and .14 can be interpreted as small, medium, and large effect sizes (Cohen, 1988).



**Table 1**  
**Information on Participants' Age, Gender, and Level of Education for the Three Samples**

	Cameroon ( <i>N</i> = 280)	Germany <sup>a</sup> ( <i>N</i> = 241)	Hong Kong ( <i>N</i> = 112)
Mean age ( <i>SD</i> )	33.81 (6.68)	36.65 (7.96)	35.58 (8.15)
Number of female participants	138 (49.3%)	130 (53.9%)	73 (65.2%)
Level of education			
Low	45 (16.1%)	29 (12.1%)	10 (8.9%)
Medium	82 (29.3%)	86 (36.0%)	21 (18.8%)
High	92 (32.8%)	72 (30.1%)	23 (20.5%)
University	61 (21.8%)	52 (21.8%)	58 (51.8%)

<sup>a</sup>Due to missing data in the German subsample, demographic information is based on *N* = 240 (age) and *N* = 239 (level of education), respectively.

where only very few people are able to read or write in the colloquial languages.

Based on its extensive use in cross-cultural research, the Schwartz Value Survey (SVS; Schwartz, 1992) was obtainable in Chinese, English, and German versions. Similarly, respective language versions of the questionnaires on life goals (GOALS; Pöhlmann & Brunstein, 1997) and satisfaction with life (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) were available, as these methods have previously been successfully applied in cross-cultural research (e.g., Hofer, Busch, Bender, Li, & Hagemeyer, in press). In contrast, the Self-Determination Scale (SDS; Sheldon & Deci, 1993) was translated from its original English version into German and Chinese, respectively, by bilingual research assistants. The assistant in Hong Kong also translated the instruction for the picture-story exercise and the sociodemographic questions. The quality of the translated material was ensured by back-translation and retranslation and checking of any problems apparent in the first translation.

### Measures

Besides some brief questions on sociodemographic information, the following instruments were administered (in the order of their presentation below).

*Implicit Achievement Motive*

Need for achievement was assessed by employing a picture-story exercise. Using an instruction recommended by Smith, Feld, and Franz (1992), participants were told that they should imagine what is going on in the portrayed situation and write a story about the people shown in the picture. After being shown each picture card for 30 s, the participants were given 5 min to write a story based on the portrayal. The following five picture cues were used: trapeze artists, night club scene, couple by a bridge, men around a table, and boxer (to be found in McClelland, 1975; McClelland & Steele, 1972; Smith, 1992). The content of the stories was coded for the need for achievement (*n* Achievement) that they reflected according to the experimentally derived and well-established scoring system developed by Winter (1994; see also for scoring rules).

*N* Achievement is defined as a disposition to strive for success in competition with a standard of excellence. Individuals characterized by a strong need for achievement typically compete to do things better, seek challenging tasks, and derive satisfaction from personal mastery (McClelland, 1987). According to Winter (1994), *n* Achievement is scored for any indication of a standard of excellence, usually expressed in descriptions positively evaluating performances, successful realization of goals, or both. Other indicators of *n* Achievement are references to successful competition with others, unique accomplishments, and disappointment about failure. The scoring system is valid for measuring implicit motives in different cultural groups (e.g., Hofer et al., in press; McAuley, Bond, & Ng, 2004).

Picture stories were coded by trained German (Cameroonian and German data) and Chinese assistants (Hong Kong data) who achieved percentage agreements of 85% or better in their responses to training material (Winter, 1994). Initially, story sets of 20 participants from Germany (10) and Cameroon (10) were scored by all German assistants. Mean percentage agreement between scorers for *n* Achievement was .89. Similarly, 15 translated picture-story sets from Hong Kong were scored by the Chinese assistant and the first author. Interrater reliability (category agreement) was .91 for *n* Achievement. Assistants independently coded the remaining data. Scoring difficulties were resolved by discussions in team meetings and via e-mail correspondence, respectively.

One German, one Chinese, and three Cameroonian participants did not write a story to at least one of the five stimulus cards and, thus, were not considered in further analyses. Furthermore, picture stories of two Chinese

participants were not codable because of insufficient number of words/characters (see Smith et al., 1992). The number of achievement motive imageries totaled across all stories ranged from 0 to 9 ( $M = 2.47$ ,  $SD = 1.78$ ) for the remaining 626 participants.

To conduct bias analyses (e.g., consistent evaluation of motive strength) but also to meaningfully compare motive strengths across cultural groups, the number of characters was transformed into a word count. In doing so, total number of characters was multiplied by a constant (number of characters  $\times .7 =$  number of words). This constant was calculated based on 165 Chinese sets of picture stories (taken from the present study and Hofer et al., in press) that had earlier been translated into English.

Across respondents, the total number of words (transformed for the Chinese sample) ranged from 115 to 1,146 ( $M = 418.3$ ,  $SD = 148.9$ ). Story scores for achievement motive imagery were significantly correlated with story length ( $r = .36$ ,  $p < .001$ ). Therefore, influence of protocol length on total motive scores was corrected by regression.

#### *Equivalence of Measurements for n Achievement Across Cultural Groups*

We examined item (picture) bias separately for each picture cue by use of analysis of variance (Van de Vijver & Leung, 1997). The single picture score for  $n$  Achievement (raw score corrected for word count) was the dependent variable. Cultural group (three levels) and score level (three levels) were the two factors. The composition of the equally sized score-level groups (low, medium, high) was based on  $n$  Achievement score totaled across the five cues for the whole sample.

A significant effect of score level was expected, as individuals at higher score levels score higher on a given picture cue. However, the significance of two effects is of interest when considering bias: cultural group and the interaction of cultural group and score level, respectively. A significant effect of culture indicates uniform bias; that is, across all score levels individuals from one cultural group score higher or lower than individuals from other cultural groups, even if they have similar total test scores. Furthermore, a significant interaction term (Cultural Group  $\times$  Score Level) indicates nonuniform bias; that is, the difference between cultural groups depends on the level of the underlying trait (Van de Vijver & Leung, 1997).

In none of the analyses, however, did the factor of culture show a significant effect, indicating the absence of uniform bias ( $\eta^2$ 's  $\leq .01$ ).

Furthermore, only one picture cue (men around a table) showed nonuniform bias, as indicated by a weak effect of the interaction,  $F = 2.71$ ,  $p < .05$ ,  $\eta^2 = .02$ . Even if this effect is rather small, we decided to exclude the picture cue from further considerations because mean comparisons across cultural groups were intended to be performed. The remaining four picture cards proved to be free of bias ( $\eta^2s \leq .01$ ).

The total number of words for the bias-free picture set ranged from 94 to 950 ( $M = 337.2$ ,  $SD = 120.9$ ). Again, influence of protocol length on total motive score ( $r = .34$ ,  $p < .001$ ) was corrected by regression to determine the final score for  $n$  Achievement (see Table 2).

### Value Orientation

The Schwartz Value Survey (Schwartz, 1992) is extensively used in cross-cultural research on values. The items of the SVS represent 10 universal value types (e.g., power, conformity) that, on a more abstract level, reflect two bipolar dimensions (higher-order value types): *Openness to Change* (self-direction and stimulation) versus *Conservation* (conformity, security, and tradition) and *Self-Enhancement* (achievement and power) versus *Self-Transcendence* (benevolence and universalism). *Openness to Change* overlaps with *Individualism* and *Conservation* with *Collectivism* (Triandis, 1996). Similarly, Schwartz (1994) argued that this dimension, which focuses on the person's self-government or social embeddedness, is a key variable when examining Individualism/Collectivism.

**Table 2**  
Descriptive Statistics of Motives, Goals, Self-Determination, Life Satisfaction, and Value Orientations

Measurement	Cameroon <i>M (SD)</i>	Germany <i>M (SD)</i>	Hong Kong <i>M (SD)</i>
$n$ Achievement	-0.03 (1.35)	-0.38 (1.24)	0.90 (1.43)
Achievement goals (importance)	4.22 (.64)	3.94 (.68)	3.82 (.65)
Achievement goals (success)	3.21 (.78)	3.29 (.77)	3.53 (.84)
Self-determination	7.08 (1.34)	7.03 (1.24)	6.95 (1.09)
Life satisfaction	17.30 (5.73)	19.45 (6.65)	20.64 (6.25)
Conservation (SVS)	4.50 (.77)	3.64 (1.10)	4.58 (.95)
Openness to Change (SVS)	3.28 (1.01)	4.28 (1.11)	3.78 (1.12)

We used the SVS to test the assumption that participants from Cameroon, Hong Kong, and Germany meaningfully differed in psychological characteristics, in this case value orientations. Only items that were found to have similar meanings across cultures were included for computing standard indexes for higher order value types (Schwartz, 1992). Thus, 22 items were used to measure Openness to Change (8 items; e.g., choosing own goals, varied life) and Conservation (14 items; e.g., family security, obedient). Participants rated the importance of each item as a guiding principle in their life on a Likert scale ranging from  $-1$  (*opposed to my values*) to  $7$  (*of supreme importance*).

As indexes for higher order value types have already been calculated by using items with equivalent meaning across cultures (e.g., Schwartz, 1992), we refrained from a detailed examination of measurement equivalence. Additionally, internal consistencies indicate that sets of items can be treated as measuring single latent variables across cultural samples under investigation. There were no negative item-whole correlations for any of the two scales in any of the three cultural groups. Considering the total sample, Cronbach's  $\alpha$  was .73 for Openness to Change ( $n = 631$ ; Cameroon: .60; Hong Kong: .81; Germany: .75) and .81 for Conservation ( $n = 624$ ; Cameroon: .70; Hong Kong: .84; Germany: .83).

### *Life Satisfaction*

The Satisfaction with Life Scale (Diener et al., 1985) quantifies the cognitive aspect of well-being. It consists of five items (e.g., In most ways my life is close to my ideal) that are rated on a 7-point Likert scale (1–7), with higher scores indicating higher life satisfaction. The SWLS has been widely used to measure life satisfaction in participants of different age groups in various cultures (e.g., Diener & Diener, 1995).

### *Achievement Goals*

Data on achievement-oriented goals were collected with the relevant four items (e.g., develop my skills) of the life-goal questionnaire GOALS (Pöhlmann & Brunstein, 1997). Participants evaluated the goals on two 5-point rating scales regarding importance (*not important* to *very important*) and success in pursuance (*not successful* to *very successful*). The questionnaire has already proved to be adequate for assessment of life goals of participants from various cultures (e.g., Hofer & Chasiotis, 2003; Hofer et al., in press).

### *Self-Determination*

To assess individual differences in functioning in a self-determined way, the Self-Determination Scale (SDS; Sheldon & Deci, 1993) was employed. The sense of self-determination is considered to be a relatively stable aspect of personality (Thrash & Elliot, 2002). The two facets of self-determination, that is, awareness of oneself and perceived choice in one's action, are each represented by five items. Each item consists of a pair of statements (e.g., A: I feel that I am rarely myself. B: I feel like I am always completely myself.). Participants are asked to evaluate on a 5-point Likert scale which statement within the pair seems more true at this point in their life (1 = *only A feels true*; 5 = *only B feels true*). Both subscales can be used either separately or summarized to determine a total score for self-determined functioning. This combined score was used in the present study.

### **Measurement Equivalence of Life Satisfaction, Goal Attributes, and Self-Determination**

As in the case of *n* Achievement, measurement equivalence of life satisfaction, life goals, and self-determination was scrutinized in detail because those methods provided data central to testing the main hypotheses of the study. Furthermore, evidence of cross-cultural applicability of GOALS and SDS is scarce.

Through use of data on life satisfaction, achievement goals (importance and successful pursuance), and self-determination, preliminary exploratory factor analyses (principal component analysis) indicated that all items showed pronounced factor loadings on appropriate factors within each of the cultural samples (life satisfaction  $\geq .32$ , importance of goals  $\geq .69$ , successful pursuit of goals  $\geq .69$ , self-determination  $\geq .30$ ).

Subsequently, we tested for measurement equivalence of the scales for life satisfaction, goals, and self-determination across the cultural samples using multigroup confirmatory factor analysis (CFA; AMOS). CFAs were conducted separately for each factor. In each case three increasingly restrictive measurement models were tested: first, the unconstrained model with no equality constraints across cultural groups; second, the measurement weights model with measurement weights constrained to be equal across groups; and, finally, the structural covariance model in which the measurement weights and the variances of the latent scores were constrained to be equal across all groups. Level of equiva-

lence was tested by nested model comparisons using chi-square difference tests.

Considering the model for life satisfaction ( $N = 633$ ), the implementation of constraints on factor loadings did not lead to a significant increment of the  $\chi^2$  statistic (unconstrained model:  $\chi^2 = 23.68$ ,  $df = 15$ ; unconstrained model–measurement weight model:  $\Delta\chi^2 = 13.11$ ,  $\Delta df = 8$ ,  $p = .11$ ). However, model comparisons indicated a slight impairment of fit when we constrained variances in the model (measurement weight model–structural covariance model:  $\Delta\chi^2 = 6.88$ ,  $\Delta df = 2$ ,  $p = .03$ ). From the perspective of multiple fit indices, the specified measurement weight model was shown to adequately fit our data: The ratio  $\chi^2/\text{degrees of freedom}$  was 1.60 and thus lay below the critical value of 2. The Goodness of Fit Index (GFI) was .98 and the Root Mean Square Error of Approximation (RMSEA) was .03.

Referring to the models for goal attributes (importance and success;  $N = 627$ ), initial runs of the CFAs pointed to the exclusion of one item (“continuously improve myself”) because of its highly divergent factor loadings across cultural groups. Even if fit indices for the unconstrained models were good, with all factor loadings reaching acceptable levels of significance, model comparisons showed an impairment of fit.

After excluding the inequivalent item, multigroup analyses were rerun. Model comparisons showed that the successive implementation of model constraints did not lead to a significant increment of the  $\chi^2$  statistic (importance: unconstrained model–measurement weight model:  $\Delta\chi^2 = 9.02$ ,  $\Delta df = 4$ ,  $p = .06$ ; measurement weight model–structural covariance model:  $\Delta\chi^2 = 4.708$ ,  $\Delta df = 2$ ,  $p = .10$ ; success in pursuit: unconstrained model–measurement weight model:  $\Delta\chi^2 = 8.29$ ,  $\Delta df = 4$ ,  $p = .08$ ; measurement weight model–structural covariance model:  $\Delta\chi^2 = 1.50$ ,  $\Delta df = 2$ ,  $p = .47$ ). Fit indices thus corroborated that the structural covariance models adequately fit our data (GFI = .99 for both models;  $\text{RMSEA}_{\text{importance}} = .05$ ;  $\text{RMSEA}_{\text{success}} = .03$ ).

Finally, a first run of analyses on equivalence of the SDS ( $N = 627$ ) indicated that factor loadings of one SDS item (“My body sometimes feels like a stranger to me—My body always feels like me”) were culture bound. Thus, model comparisons resulted in an impairment of fit, even if fit indices were acceptable. Using reduced item sets of SDS (nine items), all factor loadings were significant, and implementation of constraints did not lead to a significant increment of the  $\chi^2$  statistic (unconstrained model:  $\chi^2 = 198.53$ ,  $df = 78$ ; unconstrained model–measurement weight

model:  $\Delta v = 18.84$ ,  $\Delta df = 14$ ,  $p = .17$ ; measurement weight model–structural covariance model:  $\Delta\chi^2 = 3.84$ ,  $\Delta df = 6$ ,  $p = .70$ ). Fit indices showed that the structural covariance model adequately fit the data (e.g., GFI = .92, RMSEA = .05).

To conclude, we can assume measurement equivalence of bias-free measurements of goal attributes and self-determination across the three cultural groups, which, in turn, allows us to interpret mean differences between cultural groups (see Van de Vijver & Leung, 1997). To be cautious in interpreting mean differences across groups, we refrained from testing differences in life satisfaction across samples, as the structural covariance model led to an impairment of fit. However, this finding will not negatively affect the validity of structure-oriented analyses. For the total sample Cronbach alphas were .77 for satisfaction with life (Cameroon: .63; Hong Kong: .87; Germany: .85), .74 for importance of goals (three items; Cameroon: .68; Hong Kong: .68; Germany: .84), .76 for success in goal pursuance (three items; Cameroon: .67; Hong Kong: .84; Germany: .83), and .76 for the reduced scale of self-determination (Cameroon: .75; Hong Kong: .78; Germany: .78).

## RESULTS

All analyses that are presented in the following were conducted employing the bias-free instruments derived as described above. After testing our assumptions on prevailing cultural orientations in the samples under investigation by employing value orientations, we present correlations among measurements and examine effects of sociodemographic characteristics and cultural background on measurements of *n* Achievement, goals, self-determination, and life satisfaction (only effects of sociodemographic attributes). Finally, we present findings on predictors of achievement goals and examine the relationships among psychological constructs across cultural groups via structural equation modeling. In Table 2 descriptive data on measures are presented.

### Cultural Differences in Value Orientations

To test for differences in value orientations, a multivariate analysis of variance (MANOVA) with higher order value types as dependent variables and cultural group as a predictive factor was conducted. Multivariate statistics indicated variability across cultural



groups (Wilks's  $F = 85.24$ ,  $p < .001$ ,  $\eta^2 = .22$ ). In detail, cultural group showed a pronounced effect on both Conservation,  $F(2, 622) = 65.41$ ,  $p < .001$ ,  $\eta^2 = .17$ , and Openness to Change,  $F(2, 622) = 59.87$ ,  $p < .001$ ,  $\eta^2 = .16$ . A Bonferroni post hoc test indicated that German participants scored significantly lower for Conservation than participants from Cameroon and Hong Kong ( $ps < .001$ ). Furthermore, cultural groups significantly differed from each other in Openness to Change ( $ps < .001$ ): German participants scored higher than Cameroonian and Hong Kong Chinese subjects. Additionally, participants from Hong Kong reported higher levels of Openness to Change than did Cameroonian subjects. In sum, findings on values corroborate the assumptions guiding the selection of cultural groups for the present study.

#### Correlations Among Variables and Effects of Culture and Sociodemographic Variables

Correlations among measurements (except value orientations) were examined across cultures: *n* Achievement did not significantly correlate with any other measure employed here ( $rs \leq .08$ ). Importance of achievement goals showed significant positive correlations with success in goal pursuance ( $r = .38$ ,  $p < .01$ ) and self-determination ( $r = .13$ ,  $p < .01$ ). Success in pursuance of achievement goals significantly correlated with self-determination ( $r = .13$ ,  $p < .01$ ) and life satisfaction ( $r = .24$ ,  $p < .01$ ). Finally, life satisfaction and self-determination were significantly correlated ( $r = .24$ ,  $p < .01$ ).<sup>2</sup>

2. In the text, correlations calculated across cultural groups are presented. Inspecting the correlation coefficients for each culture separately shows that there are some differences in the strength of associations between variables but not in their direction. In those cases in which the direction of correlations differs (implicit achievement motive–life satisfaction; importance of achievement goals–life satisfaction), the correlation coefficients are so small as to be insignificant in two of the three cultures. Correlation patterns among variables emerged about as expected. For example, no correlation between the implicit achievement motive and achievement goals could be identified (e.g., Thrash et al., 2007). Moreover, success in realizing achievement goals was associated with higher life satisfaction. Similarly, correlations with sociodemographic characteristics were also as predictable. For example, the positive association between education and life satisfaction is well established (Diener, Oishi, & Lucas, 2003). Also, the negative correlation between importance of achievement goals and age is in accordance with theorizing on motivational changes with age (cf. Carstensen, Isaacowitz, & Charles, 1999).

To test for cultural differences, four univariate analyses of covariance (ANCOVA) were conducted with culture as a factor, sociodemographic variables (age, gender, education) as covariates, and *n* Achievement, goal importance, goal success, and self-determination as dependent variables. Considering life satisfaction, effects of gender (factor) and participants' age and level of education (covariates) were examined by a fifth ANCOVA.

For *n* Achievement, analyses revealed a pronounced effect of culture,  $F(2, 622) = 32.29$ ,  $p < .001$ ,  $\eta^2 = .10$ : Subsequent tests of main effects with a Bonferroni adjustment showed that participants from Hong Kong were scored more often for achievement-related imagery than were participants from the other two cultures ( $ps < .001$ ). Moreover, Cameroonian participants scored higher for *n* Achievement than German participants ( $p < .05$ ). None of the covariates had any effect ( $\eta^2s \leq .003$ ).

The importance ascribed to achievement goals differed between cultures,  $F(2, 627) = 20.28$ ,  $p < .001$ ,  $\eta^2 = .06$ : Cameroonian participants rated them as more important than participants from either Germany or Hong Kong ( $ps < .001$ ). Moreover, German participants rated their importance as higher than did participants from Hong Kong ( $p < .05$ ). Among sociodemographic variables, age,  $F(2, 627) = 12.74$ ,  $p < .001$ ,  $\eta^2 = .02$ , and level of education affected ratings of importance attached to achievement goals,  $F(2, 627) = 26.23$ ,  $p < .001$ ,  $\eta^2 = .04$ : Younger participants and participants with higher levels of education rated achievement goals as particularly important. In regards to success in goal pursuit, there was a slight effect of culture,  $F(2, 625) = 3.82$ ,  $p < .05$ ,  $\eta^2 = .01$ : Participants from Hong Kong reported significantly more goal success than Cameroonian participants ( $p < .05$ ). Neither age nor gender had any effect on goal success, but goal success increased with level of education,  $F(2, 625) = 36.65$ ,  $p < .001$ ,  $\eta^2 = .06$ . Neither culture nor any of the sociodemographic variables under consideration was associated with participants' level of self-determination (all  $\eta^2s < .01$ ).

Analysis on life satisfaction showed that female participants reported significantly higher life satisfaction than men,  $F(2, 626) = 14.19$ ,  $p < .001$ ,  $\eta^2 = .02$ . Although age did not influence life satisfaction, level of education did,  $F(2, 626) = 26.69$ ,  $p < .001$ ,  $\eta^2 = .04$ , such that higher levels of education were associated with greater life satisfaction.

### Prediction of the Importance of Achievement Goals by Self-Determination and *n* Achievement Across Cultures

To examine the relationship between need for achievement, self-determination, and importance of achievement goals across cultural groups, hierarchical regression analyses were applied. Because analyses included testing of a higher order term (interaction coefficient) and were guided by no particular theoretical expectations, the simultaneous entry method was used (Tabachnik & Fidell, 2006). First, importance of goals was regressed on participants' age and level of education to control for age- and education-related effects. In the next block, *n* Achievement and sense of self-determination were entered as predictors into the regression. Predictor variables were centered within cultural groups. The interaction coefficient (product term: *n* Achievement  $\times$  Self-determination) was entered into the model in Step 3.<sup>3</sup>

As shown in Table 3, age and level of education significantly predicted importance of achievement goals. Significantly more variance was explained in Step 2 ( $F_{\text{change}} = 4.86$ ,  $R^2 \text{ change} = .02$ ,  $p < .01$ ), however, such that a higher degree of self-determination was significantly associated with higher commitment to achievement goals. Finally, additional variance in achievement goals was predicted by including the interaction coefficient in Block 3 ( $F_{\text{change}} = 5.92$ ,  $R^2 \text{ change} = .01$ ,  $p < .05$ ).

After we partialled out effects of additional covariates (O'Connor, 1998), the nature of the interaction term was further examined by calculating achievement goals scores at the mean value and at values 1 *SD* below and above the mean for predictor variables in the significant interaction term. Simple slope tests indicated that the slope corresponding to a high degree of self-determination ( $t = 2.86$ ,  $p < .01$ ) differed significantly from zero. Thus, participants characterized by a pronounced sense of self-determination reported congruent levels of *n* Achievement and achievement goals. In contrast, the commitment to achievement goals of individuals characterized by a low sense of self-determination was unrelated to their implicit need for achievement (see Figure 1).

3. Identical results were found in regression analysis when we used predictor variables centered across cultural groups.

**Table 3**

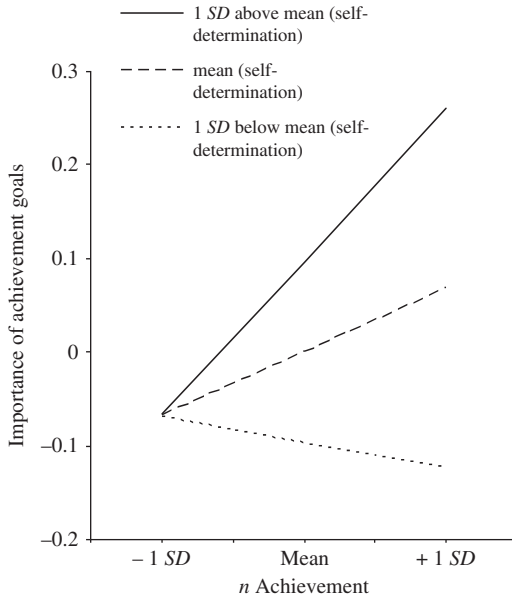
Hierarchical Regressions: Prediction of Commitment to Achievement Goals by Age, Level of Education, Need for Achievement, and Self-Determination

Block	Outcome Predictor Variables	Importance of Achievement Goals	
		$\beta$	$R^2$ ( $F$ value)
1	Age	-.18**	.05** (18.81)
	Level of education	.15**	
2	Age	-.18**	.07** (11.95)
	Level of education	.14**	
	$n$ Achievement	.06	
	Self-determination	.10**	
3	Age	-.18**	.08** (10.82)
	Level of education	.14**	
	$n$ Achievement	.07	
	Self-determination	.10**	
	$n$ Achievement	.10*	
	* Self-determination		

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

We applied a multigroup, structural equation model (AMOS) to test whether the relations to goal importance shown above, most importantly, of the interaction between self-determination and  $n$  Achievement, were equivalent in all three cultural groups. Besides the main effects of self-determination and  $n$  Achievement and their corresponding interaction term, age and level of education were included in the model (see Figure 2). Cases with missing values were excluded, leaving a total sample of 611 ( $N_{\text{Germany}} = 231$ ,  $N_{\text{Hong Kong}} = 107$ ,  $N_{\text{Cameroon}} = 273$ ). Furthermore, all variables were centered before entering them into the analysis.

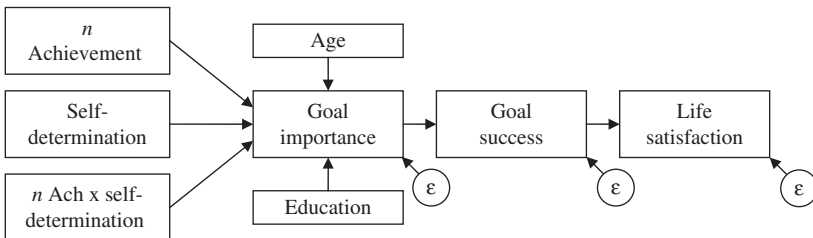
As indicated by the fit indices, the structural weights model (all paths set as equal across the three cultural groups),  $\chi^2(31) = 56.58$ ,  $p < .01$ , approximated the data sufficiently well, Adjusted Goodness of Fit Index (AGFI) = .94, RMSEA = .04. Furthermore, the structural weights model did not fit worse than the unconstrained model,  $\chi^2_{\Delta}(10) = 8.10$ ,  $p = .62$ . This means that, as hypothesized, the associations of  $n$  Achievement, self-determination and, most impor-



**Figure 1**

Importance of achievement goals and its relationship to the association of sense of self-determination with *n* Achievement.

tantly, of the corresponding interaction with goal importance were similar in all three cultural groups. Unstandardized and standardized regression coefficients are given in Table 4.



**Figure 2**

The relation of *n* Achievement and self-determination to goal importance, goal success, and well-being. This figure illustrates the basic (left half of the figure) and the extended multigroup model including goal success and life satisfaction.

**Table 4**  
**Associations of *n* Achievement and Self-Determination With Goal Importance, Goal Success, and Well-being**

Predictors of Goal Importance	B	$\beta$ Cameroon	$\beta$ Germany	$\beta$ Hong Kong
<i>n</i> Achievement	0.036 <sup>+</sup>	.076	.064	.079
Self-determination	0.049*	.103	.089	.089
<i>n</i> Achievement $\times$ Self-determination	0.045**	.124	.091	.112
Age	-0.013***	-.137	-.154	-.170
Education	0.124***	.194	.174	.193
Goal importance on goal success	0.663***	—	.574	.524
Goal success on well-being	1.654***	.217	.202	.213

*Note.* Unstandardized and standardized regression coefficients of the structural weights model,  $\chi^2(31) = 56.58$ ,  $p < .01$ , AGFI = .94, RMSEA = .04, and the modified structural weights model of the extended model,  $\chi^2(67) = 191.58$ ,  $p < .001$ , AGFI = .88, RMSEA = .06, where equality constraints of goal importance on success held only for the German and Chinese samples.

<sup>+</sup>  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

### Predicting Life Satisfaction by Goal Importance and Goal Success Across Cultures

By including data on goal success and life satisfaction, we additionally tested whether goal importance was invariantly associated with goal success and life satisfaction across these three cultural groups in an extended model. As shown in Figure 2, we do not postulate a direct link of goal importance with well-being. Rather, participants are assumed to report higher levels of life satisfaction only if goal importance is positively connected to successful pursuance of achievement goals. Again, all variables were centered before being entered in the analysis and cases with missing values were excluded, leaving a total sample of 611.

The indices for the structural weights model,  $\chi^2(68) = 211.09$ ,  $p < .001$ , indicated a reasonable fit, AGFI = .87, RMSEA = .06. However, the constrained model fit significantly worse than did the

unconstrained model,  $\chi^2_{\Delta}(14) = 33.95, p < .01$ . Inspection of the simple correlations suggested that the correlation between goal importance and goal success, which was lower in the Cameroonian than in the two other cultural groups, was a possible explanation thereof.<sup>4</sup> Consequently, we loosened the equality constraints so that the regression coefficient from goal importance on goal success was estimated separately for the Cameroonian sample while the equality constraint still held for the other two cultural samples. This modified structural weights model approximated the data sufficiently well,  $\chi^2(67) = 191.58, p < .001$ , AGFI = .88, RMSEA = .06. Furthermore, the modified model did not fit worse than the unconstrained model,  $\chi^2_{\Delta}(13) = 14.44, p = .34$ .

To further examine the quality of our model, two alternative models were tested. First, a model with a direct path from goal importance to life satisfaction, excluding data on goal success, was tested, because some of the effects in our theoretically deduced causal chain might be due to direct effects between nonadjacent concepts that are not taken into account in the model. An examination of the structural weight model indicated that it adequately fit our data (e.g., GFI = .93, RMSEA = .06) and was not inferior to the unconstrained model ( $\Delta\chi^2 = 13.54, \Delta df = 12, p = .33$ ). Most important, however, there was no significant direct positive link between goal importance and life satisfaction (CR = 1.78,  $p = .08$ ).

Second, we examined a model with a different order of goal attributes, that is, we tested whether success in goal pursuit leads to enhanced commitment to goals, which, in turn, relates to higher life satisfaction. An inspection of the corresponding structural weights model indicated that the structural paths linking the interaction between self-determination and *n* Achievement to goal success (CR = 1.23,  $p = .22$ ) did not reach a level of significance. Moreover, even if fit indices indicated a reasonable fit across cultures (namely, GFI = .91; RMSEA = .07), implementing equality constraints on

4. The lower correlation between importance of and success in pursuance of goals among Cameroonian participants is not a function of the measures' lower reliabilities in this subsample. By using Spearman correction for attenuation, we adjusted measures for unreliability in the three samples. However, an inspection of the adjusted correlation coefficients by employing Fisher *r*-to-*z* transformation showed that correlation of goal attributes was still significantly smaller among Cameroonian participants than among participants from Hong Kong ( $z = 6.02, p < .001$ ) and Germany ( $z = 6.02, p < .001$ ).

structural paths led to a significant increment of the  $\chi^2$  statistic ( $\Delta\chi^2 = 29.97$ ,  $\Delta df = 13$ ,  $p = .005$ ).

Thus, in sum, these findings mean that not only were the predictors of goal importance similar across the three cultural samples, but also goal importance was uniformly related to goal success (equality constraints held for the Germans and the Chinese only), which, in turn, was associated with life satisfaction across all three cultural contexts.<sup>5</sup>

## DISCUSSION

Previous research has indicated that the alignment of implicit and explicit motives is moderated by self-examination, be it dispositional (e.g., Thrash & Elliot, 2002) or experimentally induced (Schultheiss & Brunstein, 1999). It is argued that some individuals use the implicit need for achievement as a foundation for the development of their self-attributed achievement strivings (Thrash et al., 2007). Thus, the capacity to access implicit motives, considered as a need-related part of the implicit self-system (Baumann et al., 2005; Greenwald & Banaji, 1995), enables the individual to test any given goal for its compatibility with his or her inner, preconsciously represented needs (McClelland et al., 1989).

So far, however, this association has only been demonstrated in student samples from Euro-American cultural contexts. Thus, the present study is the first to examine the association of individuals' disposition to function in a self-determined way with their motive congruence in a cross-cultural design. Results showed that, independent of their culture of origin, individuals high in self-determination commit themselves to conscious goals that are in accordance with their implicit motivational structure. Before these results and their relation to goal success and life satisfaction are discussed, however, the cross-cultural design of this study calls for some brief notes on the equivalence of measures across the cultural groups and on the selection of cultures.

5. As the distribution of achievement goals (importance) deviated slightly from normality, regression analysis was also conducted with the transformed variable. Also, regression analysis and structural equation modeling were performed with full scales (including biased items). In neither case did results differ from the reported findings.



### Equivalence of Measures and Differences in Value Orientations Across Cultures

Cross-cultural analyses require a careful test of whether the measures taken are sufficiently comparable across cultures. In-depth analyses of cultural equivalence indicated very few biased items, requiring only minimal modifications of the original scales and rendering the constructs measured by these instruments highly comparable with previous research on these variables and amenable to cross-cultural comparison.

Furthermore, we tested whether the selected cultural groups indeed differ in their commitment to guiding principles in life. The value patterns varied across cultures as expected: German participants assigned lower importance to Conservation and higher importance to Openness to Change than did participants from Cameroon and Hong Kong, where interpersonal relatedness, obedience, and respect toward parents and elders are stressed in rearing children (e.g., Nsamenang & Lamb, 1995; Stewart et al., 1999). Furthermore, values reflecting the significance of personal stimulation and self-direction in life (Openness to Change) mirror divergent socioeconomic conditions in Cameroon and Hong Kong: In non-Western cultural contexts characterized by greater affluence and level of education, interpersonal harmony continues to be valued in rearing children, yet, children's self-reliance is increasingly tolerated, and even valued, as family survival does not depend on the economic contribution of offspring (Kağıtçıbaşı, 2005). To conclude, the three samples represent a wide range of cultural modes. In this light, any result that signifies uniform psychological mechanisms can be interpreted as a strong indicator of a universal phenomenon.

### Cultural Differences in the Strength of Variables

Cross-cultural research designs make two different approaches to data analysis possible: First, as in the focus of the present study, a structure-oriented approach examines whether certain psychological associations are comparable across cultures; second, the level-oriented approach concerns comparisons of the strength of variables across cultures (Van de Vijver & Leung, 1997). Although not central to the present analyses, the level-oriented approach yields results in its own right, so these will also be discussed briefly.

Because no directed hypotheses on cross-cultural differences or similarities were set up, our interpretation of findings is somewhat speculative. Yet, where cultural differences in the strength of a given variable occurred, these seem consistent with past literature. For example, Cameroonians rated achievement goals as more important than did participants from both Germany and Hong Kong. This finding may be due to materialistic values such as achievement losing importance in postindustrial societies (Inglehart & Baker, 2000). As for *n* Achievement, German participants scored lowest. This replicates other findings showing a relatively low level of the implicit achievement motive in German samples (e.g., Pang & Schultheiss, 2005). Hong Kong Chinese participants scored highest on *n* Achievement because, as Salili (1996) argues, socialization emphasizes family advancement. This focus fosters the development of a strong need for achievement in early childhood, particularly in Hong Kong, as achievement can be seen as a partial enactment of filial piety.

There were no cultural differences, however, for self-determination, a disposition that has been linked to integrative processes of the self, that is, seeking harmony between intrapsychic forces (e.g., needs) and external regulations (e.g., cultural norms and values; Deci & Ryan, 1985). Our finding that, despite different cultural orientations, the feeling of being in charge of one's own actions and acting in accordance with one's inner needs is equally distributed across cultures parallels findings that across cultures either independent or interdependent cultural orientations can be integrated into the self (Chirkov et al., 2003). As previously outlined, cross-cultural differences in life satisfaction were not scrutinized.

### **The Culture-Independent Relationship of Self-Determination With Motive Congruence**

The present study vastly increases the generalizability of findings on the dynamics of motive congruence and, additionally, provides evidence for the significance of personality dispositions in goal commitment and its relation to well-being across cultural samples recruited in Cameroon, Germany, and Hong Kong.

Independent of culture, individuals with high degrees of self-determination are more strongly attuned to their inner needs and commit themselves to goals that are in accordance with their implicit achievement motive. Put differently, being guided by deeply rooted,

affective preferences for goal states, self-determined individuals with a low need for achievement rate achievement goals as relatively unimportant, whereas self-determined people with a high need for achievement judge achievement goals to be of relatively high importance. In contrast, people with low self-determination fail to achieve integration and thus show inconsistencies among various aspects of personality: The importance of achievement goals is not meaningfully related to their implicit achievement motive.

This result clearly demonstrates the importance of the self as a reference value in each of the three cultural groups investigated here. Thus, although personality (e.g., motives) and culture (e.g., norms) may push psychological phenomena (and behavior) into opposite directions in some cases, basic psychological mechanisms may, nevertheless, be associated with equivalent outcomes across cultures (see Chiu & Hong, 2007). This is noteworthy because these cultures differ markedly in member sensitivity to social context and emphasis on cultural norms or personal choice. It is often argued that in non-Western cultures the social context is so dominant a force of behavior and so central to psychological functioning that it suppresses inner needs in favor of normative compliance supporting the common good of the social group (see, e.g., Oyserman, Coon, & Kemmelmeier, 2002).

The present results, however, speak otherwise. There were no differences in either the level or the functioning of self-determination across cultures, indicating that the ability to gain access to inner needs and its relation to the setting of goals is as strong in cultures that view the self as unique and self-reliant as in cultures that conceive of the self as highly embedded in its social context. Thus, although in principle various cultural practices can be integrated into the self (Chirkov et al., 2003), individual differences in basic facets of personality, such as sense of self-determination and implicit motives, play a significant role in this process of integration (see also Hofer, Busch, & Kiessling, 2008). What is more, this importance of the inner needs is shown even for the achievement domain, even though achievement is universally highly valued (see Sheldon, Elliot, Kim, & Kasser, 2001).

### **The Culture-Independent Relationship of Goal-Motive Congruence With Life Satisfaction**

As has been shown in previous studies (e.g., Hofer, Chasiotis et al., 2006), such a compatibility of types of motives has beneficial

concomitants on subjective well-being. In the present study, this was demonstrated by the positive association of the importance of achievement goals with goal success, which in turn was related to enhanced life satisfaction (cf. Brunstein et al., 1998). In general, ascribing high importance to achievement goals was associated with their successful realization. For the Cameroonian sample, however, this conclusion holds true to a lesser extent. Here, it should be noted that the living conditions in the cultural environment in Cameroon do not provide ample opportunity to realize achievement goals, which oftentimes are concerned with improving one's performance. We expect that in other cultures low in socioeconomic development a similar weakening of this relationship would also be found.

Nevertheless, the indirect linkage of goal importance via goal success on life satisfaction was found across all three cultural groups. Thus, the importance ascribed to achievement goals, which itself is moderated by the interaction of self-determination and the implicit achievement motive, relates to life satisfaction only if those goals can successfully be pursued. In other words, goals that remain unattained would not be expected to contribute to well-being whether they are need congruent or not (see Brunstein et al., 1998).

Thus, the present study not only confirmed previous research on moderators of motive-goal congruence but also confirmed the positive relationship of the alignment of distinct aspects of personality, that is, motivational systems, with well-being. Thus, self-determination is equally important across cultural groups to achieve personal integration, which in turn relates to enhanced levels of well-being.

### Outlook

Although this study sheds an important light on correlates of motive congruence, there are still some improvements that ought to be taken into account in future cross-cultural research on this issue. For example, other personality dispositions that indicate access to deeply rooted affective needs could be included (e.g., body consciousness), or experimental techniques such as imagining goal success (Schultheiss & Brunstein, 1999) could be employed. Additionally, other motive domains should be investigated that, according to self-determination theory, unlike implicit achievement motivation, are not considered to be compatible with fundamental needs of the self (Deci & Ryan, 1985).

To circumvent some challenges to cross-cultural research, motive scores could also be collected on the collective level. For example, school books or popular children's books could be scored for motive imagery so as to gain insight concerning the extent to which socialization practices reflect certain motives (McClelland, 1987), providing helpful information for the interpretation of group differences in motive strength. Moreover, replicating the present results obtained through a cross-sectional design in a future longitudinal research design would corroborate the proposed interpretation of results.

Finally, attainment should be included as a third indicator for specifying goals, because unattained goals are not expected to contribute to well-being, whether they are need congruent or not (see Brunstein et al., 1998). As cultural contexts differ in the extent to which they afford opportunities for goal realization for each individual, this variable would also be informative concerning the relation between goal importance and success in goal realization.

In sum, the present study makes valuable contributions to motivational and cross-cultural research and theorizing by demonstrating that a sense of self-determination moderates goal-motive congruence, regardless of whether the cultural context emphasizes either self-direction in life or interpersonal harmony. We hope this highlights that the search for universal psychological processes is just as fruitful an endeavor as the search for cultural differences; core concepts of personality are powerful determinants of psychological functioning, even in cultural contexts where personality appears to be a less influential determinant of individual outcomes. Moreover, this finding enriches the literature on motive congruence by placing an important tenet on a much broader foundation than hitherto found.

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