

The Higher Your Implicit Affiliation-Intimacy Motive, the More Loneliness Can Turn You Into a Social Cynic: A Cross-Cultural Study

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Abstract

Research has shown that the strength of the implicit affiliation-intimacy motive moderates the effects of satisfaction and frustration of the need for affiliation-intimacy: Low relatedness was more closely related to envy for people high in the implicit affiliation-intimacy motive. The present study tests a moderating effect of the strength of the implicit affiliation-intimacy motive on the association between low relatedness and social cynicism in samples of elderly people from Germany, the Czech Republic, and Cameroon. A total of 616 participants provided information on their implicit affiliation-intimacy motive, relatedness, and social cynicism. As hypothesized, a moderation effect of the strength of the implicit affiliation-intimacy motive was found that held true regardless of participants' culture of origin: For people high in the implicit affiliation-intimacy motive, a lack of relatedness was associated with higher levels of social cynicism. Our findings complement other theories stating that positive relationships with others are a significant part of successful aging.

For many people, positive relationships with others are an integral part of successful aging (Fisher, 1995; Hill, 2008; Ryff, 1989). Indeed, loneliness in old age is connected with poor well-being (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Fees, Martin, & Poon, 1999). Thus, humans seem to have an innate need for affiliation-intimacy. Yet, little has been done to test what consequences individual differences in the strength of this need have. Does need strength affect elderly people's reaction to a frustrated need for affiliation-intimacy? In a study with 616 elderly participants, we examined this question and tested for a moderating effect of need strength on the relation between need frustration and social cynicism. Elderly people were recruited in three different cultural backgrounds (Germany, the Czech Republic, and Cameroon) to test whether the hypothesized relationship between variables is affected by participants' culture of origin and to increase the degree to which results can be generalized to contexts other than the predominantly studied Western cultures (cf. Amett, 2008).

The Affiliation-Intimacy Motive

Motivational psychology distinguishes two types of motives: self-reported or explicit motives, or the way people describe

themselves, and implicit motives, defined as unconsciously represented affectively charged wishes and desires, that are received from thematic apperception testing (i.e., fantasy storytelling; McClelland, Koestner, & Weinberger, 1989). Explicit and implicit motives barely correlate with one another, and they predict different kinds of behavior. While explicit motives are linked to short-term specific behavior matching with a person's self-concept, implicit motives predict spontaneous behavior in the long run (e.g., Brunstein & Maier, 2005; McClelland et al., 1989). Due to the affective nature of implicit motives and our interest in those spontaneous behavioral trends and their long-term character, the present study focused only on implicit motives.

Based on Henry Murrays pioneering work on the classification of needs, motivational psychology distinguishes between needs that are to be either physically satisfied (primary needs) or are of emotional or mental origin (secondary needs; Murray, 1938). Although there are many examples of secondary needs, implicit motivational research has focused on achievement,

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power, and affiliation-intimacy. In the case of the need for affiliation-intimacy, these spontaneous behavioral tendencies are best described as the concern for a warm, close relationship with others as well as a concern for establishing, maintaining, or restoring a positive affective relationship with other persons or groups (Atkinson, Heyns, & Veroff, 1954; McAdams, 1980).

Given their unconscious nature, the need for affiliation-intimacy and all other implicit motives are derived from scoring fantasy stories, with the Picture Story Exercise being the standard measure for this purpose (McClelland et al., 1989). Originally coded as the desire to avoid separation and rejection, the affiliation motive (Atkinson et al., 1954) was later extended by the notion of intimacy, the strong need to seek out opportunities to share one's life with others (McAdams, 1980). Due to theoretical and empirical overlap, Winter (1994) combined both tendencies in a composite factor for his coding manual (but see Weinberger, Cotler, & Fishman, 2010, for a criticism of Winter's approach). Based on similar empirical experiences (strong overlap between both components; see Hofer & Busch, 2011b), we use Winter's conception of affiliation-intimacy.

In general, research has found that differences in the strength of the implicit affiliation-intimacy motive relate to differences in behavior: For instance, people's corrugator activity varies with their interaction partner's facial expression and their implicit affiliation-intimacy motive strength (Kordik, Eska, & Schultheiss, 2012). Moreover, people with a high implicit affiliation-intimacy motive tend to seek out physical proximity to others (McAdams & Powers, 1981). Likewise, they seek out more opportunities for social interaction, like seeing friends or contacting them by other means of communication (Lansing & Heyns, 1959). They work in people-oriented jobs (Exline, 1960) and prefer friends to experts as coworkers (French, 1956). When a person's goals and actual behavior are directed toward affiliation-intimacy, the implicit affiliation-intimacy motive is associated with life satisfaction (Schüler, Job, Fröhlich, & Brandstätter, 2008). That is, if the need for affiliation-intimacy is fulfilled, positive outcomes are to be expected.

However, being high in implicit affiliation-intimacy does not automatically result in good relations with other people. Boyatzis (1973) pointed out that people high in the implicit affiliation-intimacy motive tend to be sensitive toward signs of rejection. Indeed, they react more negatively toward people who express attitudes diverging from their own than people with a low implicit affiliation-intimacy motive (Byrne, 1961). Mason and Blankenship (1987) found that women with a high implicit affiliation-intimacy motive psychologically and physically abused their partner when low in activity inhibition and under stress. That is, difficulties in satisfying a high implicit affiliation-intimacy motive seem to be associated with conflicts in close relationships. Hofer and Busch (2011b) examined how the strength of the implicit affiliation-intimacy motive and need satisfaction interacted: They found that people whose implicit affiliation-intimacy motive was high but who felt their need for affiliation-intimacy was frustrated reported more envy and indirect aggression toward others.

The Affiliation-Intimacy Motive in the Elderly

Research on implicit motives in old age is very scarce; in general, research has been conducted with young and middle-aged adults. As a notable exception, McClelland, Scioli, and Weaver (1998) focused on effects of implicit motives on recall/working memory. However, developmental shifts in the strength of the implicit motives as well as correlates of their satisfaction and frustration, respectively, in later life have not yet been studied.

This lack of research on the implicit affiliation-intimacy motive in old age is unfortunate, as good and emotionally rewarding relationships with others are considered to be a prerequisite of successful aging (e.g., Rowe & Kahn, 1998; Ryff, 1989). Even if it has been argued that with age there is an increasing sense of interiority, self-reflection, and introspection (Neugarten, 1968), numerous studies have shown that continuing engagement with social life and cultivation of social relationships are essential for psychological and physical health (Antonucci, Fuhrer, & Dartigues, 1997; Cacioppo et al., 2006; Lennartsson, 1999; Litwin & Shiovitz-Ezra, 2011; Von Faber et al., 2001). Thus, maintaining an effective social (support) system seems to be crucial for aging successfully.

Furthermore, the empirically well-supported socioemotional selectivity theory postulates a change in social motivation in the aging process. People nearing the end of their lives undergo a process of reappraisal of their priorities: The investment in socioemotional goals—especially in strengthening close relationships by spending meaningful time with family and established friends—becomes a central focus of behavior to maximize positive emotional experiences. In contrast, investing resources in long-term goals, like building up new skills, whose future benefit may not be certain, is reduced (Carstensen, Isaacowitz, & Charles, 1999). Taken together, the satisfaction of the need for affiliation-intimacy is theoretically important in old age because it is assumed to be part of successful aging. Mind that this does not necessarily imply that the strength of the implicit affiliation-intimacy motive ought to increase but that its satisfaction gains new relevance with age. However, what has not been taken into account yet is that individuals may differ in the extent to which they are affiliation-intimacy motivated. That is, whether the implicit affiliation-intimacy motive is high or low has an influence on how dire the consequences of a frustration of this need are (Hofer & Busch, 2011a,b).

In old age, physical or mental declines may affect people's abilities to keep up with their friendships and relations, at least with their desired level of contact (Fees et al., 1999). Furthermore, many are confronted with losing their loved ones. So even if individuals want to act according to their affiliation-intimacy motive, they often cannot due to being more and more limited in their abilities and opportunities. As a consequence, loneliness appears significantly more often in older age groups (Jylhä, 2004). Besides detrimental effects on well-being (e.g., Cacioppo et al., 2006; Fees et al., 1999), this need frustration shows in people's behavior: Hofer and Busch (2011b) found that a high

implicit affiliation-intimacy motive coupled with low need satisfaction was associated with increased envy and indirect aggression. Thus, people with a high implicit affiliation-intimacy motive tend to feel easily rejected and might react with strong feelings and even aggressively when they feel their desire for affiliation-intimacy is thwarted. Analogous to these results, we assume that older people with a combination of a high implicit affiliation-intimacy motive and low need satisfaction may turn into what is described as the obstinacy of old age (Kjølseth, Ekeberg, & Steihaug, 2009), or become negative and suspicious of others—in other words, social cynics.

Social Cynicism: A Consequence of Unsatisfied Affiliation-Intimacy?

Social cynicism is one of five dimensions of social axioms, subjective expectancies about how processes in the world are linked (e.g., Leung et al., 2012), and is considered an ego-defensive mechanism (Leung et al., 2002). Social axioms were proven to apply to no less than 40 cultures and can therefore be considered a universal pattern (Leung & Bond, 2004). Social cynicism is defined as a belief or an attitude characterized by “a negative view of human nature, a biased view against some groups of people, a mistrust of social institutions, and a disregard of ethical means for achieving an end” (Leung et al., 2002, p. 292); in short, it is marked by the assumption that human nature is no good.

Results have shown that mistrust toward other people and low expectations toward societal conditions in later life are part of the social cynic’s nature (Kurman, 2011; Li & Leung, 2012; Singelis, Hubbar, Her, & An, 2003). For example, people high in social cynicism prefer competitive behavior to cooperation, as they expect others not to be cooperative in return (Bond, Leung, Au, Tong, & Chemonges-Nielson, 2004). Thus, it does not seem surprising that social cynicism has been found to correlate with negative outcomes such as reduced subjective health evaluations and lower satisfaction with interpersonal relationships (Dincă & Iliescu, 2009), as well as loneliness (Neto, 2006).

Interestingly, social cynicism seems to be facilitated by conflicts in the family, and therefore experienced frustration in immediate relationships (Wong, Chen, & Wu, 2010). Wong and colleagues (2010) found a positive association of social cynicism with family dysfunction and a negative association with relationship harmony (see also Chen, Wu, & Bond, 2009; Lam, Bond, Chen, & Wu, 2010). The authors argue that children are more likely to develop a negative view of their social world if parents thwart their emotional needs by lacking warmth, care, and support. This is in line with the finding that poor family relationships in childhood were associated with interpersonal hostility in adulthood (Luecken, 2000). Thus, findings indicate that experiences in social interactions shape individuals’ world views. It is therefore likely that social cynicism is, among other sources such as negative societal change (Li & Leung, 2012), a result of a frustrated need for affiliation-intimacy.

Research Hypotheses

The present research thus is guided by the following argument: Social cynicism is associated with the frustration of the need for affiliation-intimacy (cf. Wong et al., 2010). However, drawing from previous research on individual reactions toward the frustration of the need for affiliation-intimacy (Hofer & Busch, 2011b), we assume that the strength of the implicit affiliation-intimacy motive moderates this association: More precisely, we expect individuals with a strong implicit affiliation-intimacy motive to have higher rates of social cynicism when their need is not met. On the other hand, for those with a low implicit affiliation-intimacy motive, need frustration ought not to be associated with increased social cynicism.

As implicit motives are assumed to be a universal concept (Weinberger & McClelland, 1990) and need frustration has been shown to have similar effects in German and Cameroonian participants (Hofer & Busch 2011b), we chose a cross-cultural study design. We expect similar structures between the constructs in question across cultural backgrounds. That is, a structural-level approach (Van de Vijver & Leung, 1997) was followed. The mean-level approach that aims at analyzing cultural differences in strength of variables will not be pursued (for methodological difficulties in the interpretation of cultural mean-level differences, see Van de Vijver & Leung, 1997).

In general, psychological research focuses on European American areas, which is not at all representative of other cultures (Arnett, 2008; Henrich, Heine, & Norenzayan, 2010). But extending designs from monocultural backgrounds to multiple cultures is indispensable for drawing conclusions on the universality of motives and their functioning. In case of positive results, we have evidence for the generalizability of the implicit affiliation-intimacy motive, its frustration, and resulting attitudinal consequences. Results may also give a more detailed insight into how the implicit affiliation-intimacy motive may contribute to a better understanding of successful aging.

Selection of Cultural Contexts

Theoretical sampling recommendations in cross-cultural research point toward choosing cultural backgrounds that differ largely in many respects to strengthen the evidence of results (Van de Vijver & Leung, 1997). If similarities between such samples are found, this is strong evidence of the universality of the hypothesized relationship among variables. This was the rationale behind the choice of samples from three countries that differ significantly on economical, ecological, and psychological dimensions: Germany, the Czech Republic, and Cameroon.

In psychological thinking about culture, various definitions of culture in psychological terms have been proposed, such as individualism and collectivism on a national level (Hofstede, 1980), and independent and interdependent self-construal on an individual level (Markus & Kitayama, 1991). Our choice of cultural samples was based on a third prominent approach toward assessing culture: the value orientations approach introduced by

Schwartz (1992). Ten value types are distinguished that can be subsumed by four second-order value types. Two of these have been found to reliably differ between individuals from various cultures, namely, *Openness to Change* (subsuming self-direction and stimulation values) and *Conservation* (subsuming conformity, security, and tradition values). Openness to Change shows distinctive overlap with individualism, and Conservation with collectivism (Schwartz, 1996; Triandis, 1996). Accordingly, Openness to Change is expected to be higher in Western compared to non-Western cultures, whereas Conservation is expected to be lower in Western compared to non-Western cultures. Indeed, previous studies have demonstrated such differences in value orientations between samples from Germany, the Czech Republic, and Cameroon (e.g., Hofer et al., 2010; Jowell & the Central Coordinating Team, 2007). To corroborate our assumption that the three cultural contexts indeed differ from each other in terms of a psychological definition of culture, value orientations were assessed with the hypothesis that the German sample scores higher in Openness to Change than the other two samples and the Cameroonian sample lower than the other two samples. Concerning Conservation, the hypothesis is that the German sample scores lower than the other two samples and the Cameroonian sample higher than the other two samples.

METHOD

Sample

In total, 616 elderly people were recruited in Germany ($n = 238$; 131 females), the Czech Republic ($n = 163$; 91 females), and Cameroon ($n = 215$; 103 females). Cultural samples were balanced with respect to gender distribution. Study participants were aged between 59 and 93 years ($M = 67.54$, $SD = 6.31$), with 95% of the study sample being between 60 and 80 years. There were no age differences between female and male participants. Yet, cultural samples significantly differed in mean age, $F(2, 610) = 74.20$, $p < .001$, $\eta^2 = .20$: Mean age of Czech participants ($M = 71.62$, $SD = 5.77$) was the highest, followed by German ($M = 67.50$, $SD = 5.82$) and Cameroonian participants ($M = 64.48$, $SD = 5.44$). Eta-squared (η^2) is reported as the index of the strength of association; η^2 s of .01, .06, and .14 can be interpreted as small, medium, and large effect size, respectively. Participants' level of formal school education was categorized into two categories, that is, low (less than university entrance qualification; $n = 311$) and high education (university entrance qualification and above; $n = 305$). Comparisons between the samples revealed notable differences in the distribution of educational levels ($\chi^2_2 = 179.60$, $p < .001$): While both educational levels are almost equally distributed in the German sample (low level: 51.3%), a low level of education was assigned to 80% of the Cameroonian sample but only to 10.4% of the Czech sample. Across the sample, 413 elderly people reported being engaged in a steady relationship. The percentage of elderly participants with a steady partner was highest in the Cameroonian sample (77.7%; $\chi^2_2 = 19.18$, $p < .001$), followed

by the German (64.3%) and the Czech samples (57.1%). Only 42 participants were childless, whereas the remaining 574 had at least one child (range = 1–18). While the number of children was similar in the Czech ($M = 1.94$, $SD = .93$) and German samples ($M = 1.99$, $SD = 1.29$), it was significantly higher in the Cameroonian sample ($M = 5.91$, $SD = 2.81$), $F(2, 613) = 299.34$, $p < .001$, $\eta^2 = .49$.

Procedure

The data were collected as part of a larger project on successful aging (e.g., Hofer et al., 2014). Despite its arbitrary nature, in most Western cultural contexts, a chronological age of 65 years has been widely accepted as defining the beginning of old age (i.e., as a definition of an elderly or older person). As this conceptualization does not adapt well or may not be adequate in non-Western cultural contexts (World Health Organization, 2014), 60 years of age was used as a marker for the beginning of old age in the study at hand to account for varying conceptions in different cultural contexts (e.g., United Nations, 2013).

While elderly people in Germany were recruited via ads in local newspapers, recruitment in the Czech Republic was done via flyers and notes in local senior centers. In Cameroon, elderly people were contacted and recruited with the help of local research assistants. Note that only native participants were recruited for the study to guarantee cultural homogeneity within each of the three samples. Special attention was paid to sampling in Cameroon due to the multi-ethnic composition of the population. Only ethnic Grassfield Bantus (Nso) from the Anglophone North West Province were sampled (see Nsamenang & Lamb, 1995).

Participation was voluntary. German (40 €), Czech (300 CZK/12 €), and Cameroonian participants (3,250 CFA/5 €) received monetary compensation proportional to average differences in GDP per capita. While data collection was done on university premises in Germany, it was mostly done at participants' homes in Cameroon and the Czech Republic. In all three cultures, local research assistants were present during data collection to help clarify any questions that arose.

Measures

Measures were administered in either Czech (the Czech Republic), German (Germany), or English (Cameroon). Even though English is not the native language among the Nso in the North West Province of Cameroon, it is the official language and is predominantly used in everyday life. Yet, local assistants who were all ethnic Nso were trained to give (standardized) explanations of test items or instructions in Lamnso (the native language of the Nso) or Pidgin English, which is often used among elderly people, in case of a lack of understanding during data assessment.

Given their extensive use in cross-cultural research, the Schwartz Value Survey (Schwartz, 1992) and the Social Axioms

Survey (Leung et al., 2002) were available in English, Czech, and German versions. Additionally, English and German versions were at hand for the Basic Need Satisfaction in Life Scale (Gagné, 2003), as the instrument was used in past research in various cultural contexts (e.g., Hofer & Busch, 2011a,b). The Czech version of the last mentioned scale was developed by the widely implemented translation-back-translation procedure. The questionnaire in its original English version was translated by a professional translator into Czech and back-translated by bilingual psychologists. The final Czech version of the questionnaire was completed in a subsequent discussion.

Initially, participants provided basic sociodemographic information. Subsequently, measures for the implicit motive for affiliation-intimacy, relatedness, social cynicism, and value orientations were administered.

Implicit Affiliation-Intimacy Motive. The implicit affiliation-intimacy motive (henceforth abbreviated as *n* Aff-Int) was assessed by a picture-story exercise (PSE; McClelland et al., 1989). Participants were shown six pictures depicting social situations (*couple by a river, trapeze artists, four men seated at a table, boxer, women in lab, man and woman with horse*; for reprints, see McClelland & Steele, 1972; Smith, 1992) and were asked to imagine what is going on in the portrayed situation and make up a story about the people shown in the picture. Using an instruction recommended by Smith, Feld, and Franz (1992), it was emphasized that there are no right or wrong stories. Due to assumed individual differences in penmanship based on level of education or regular use in daily life, participants were asked to tell their stories rather than write them down. After being shown each picture card for 30 seconds, participants were given 5 minutes to compose a complete story based on the portrayal. To remind participants to tell a complete story, they were given a sheet with four printed questions (1. What is happening? Who are the people? 2. What has led up to this situation? That is, how did the story begin? 3. What are the people thinking about, what do they want, and how do they feel? 4. What will happen? How will the story end?). Stories were audiotaped and later transcribed and coded.

Stories were coded for *n* Aff-Int according to the well-established manual for scoring motive imagery in running text developed by Winter (1994; see the same source for details on scoring rules, too).

This manual has proven to adequately assess implicit motives in various cultural groups (e.g., Hofer, Chasiotis, Friedlmeier, Busch, & Campos, 2005). Accordingly, any response indicating friendly relationships as expressed by positive feelings toward others, regret about the disruption of a relationship, friendly companionate activities, or friendly, nurturant acts is coded for *n* Aff-Int (Winter, 1994).

All picture stories were coded by a team of four German assistants who were trained by the first and second authors of the present study and who all achieved percentage agreements of 85% or better with training material prescored by experts (Winter, 1994). Among the assistants was a bilingual Czech-

German assistant who, in addition to being involved in scoring German and Cameroonian stories, was alone responsible for scoring Czech stories.

Initially, 20 sets of picture stories, that is, 10 German and 10 Cameroonian sets, respectively, were coded by all assistants. Percentage agreement among raters ranged from .87 to .94 for *n* Aff-Int (Cohen's kappas = .63 to .88). As inter-rater reliability was sufficiently high, each assistant independently coded a different set of the remaining picture stories. Scoring difficulties were resolved by discussions in regular meetings.

Across the 616 participants, the total number of words ranged from 187 to 2,790 ($M = 718.58$, $SD = 400.64$). There were significant differences in protocol length between the German ($M = 882.10$, $SD = 408.49$), the Czech ($M = 759.94$, $SD = 446.24$), and the Cameroonian samples ($M = 506.22$, $SD = 222.27$), $F(2, 613) = 60.79$, $p < .001$, $\eta^2 = .17$. The number of affiliation-intimacy motive imageries totaled across all stories ranged from 0 to 15 ($M = 3.42$, $SD = 2.53$) in the total sample. The mean number of motive imageries in the Cameroonian sample ($M = 1.95$, $SD = 1.58$) was significantly lower than in the German ($M = 4.31$, $SD = 2.69$) and Czech samples ($M = 4.05$, $SD = 2.44$), $F(2, 613) = 68.23$, $p < .001$, $\eta^2 = .18$. As typically reported in literature, there was a significant relationship between protocol length and number of motive imageries ($r = .45$, $p < .001$) in the total sample (r s ranging from .27 to .36 within each of the cultural samples). Thus, the effect of word count on the coded strength of the implicit affiliation-intimacy motive was corrected by regression across the total sample to obtain the final score for *n* Aff-Int.

Need Satisfaction: Relatedness. In research, the Basic Need Satisfaction in Life Scale (e.g., Gagné, 2003; Weinstein & Ryan, 2010) is used to assess the level of satisfaction of the three basic psychological needs postulated by self-determination theory (Deci & Ryan, 1985): autonomy, competence, and relatedness. In the study at hand, relatedness was used as an indicator of the satisfaction versus frustration of the implicit affiliation-intimacy motive (see Hofer & Busch, 2011b). Relatedness was measured by eight items (e.g., "I really like the people I interact with") that were rated on a 7-point Likert scale (0 = *not true at all*; 6 = *definitely true*). Cronbach's alphas for the scale were .73 (German sample), .64 (Czech sample), and .81 (Cameroonian sample).

Social Cynicism. To assess individuals' negative view and mistrust of other people and groups, the 20 items of the Social Axioms Survey II (SAS II; Leung et al., 2012) measuring social cynicism were administered. Each item (e.g., "Kind-hearted people are easily bullied") was evaluated on a 5-point Likert scale (0 = *strongly disbelieve*; 4 = *strongly believe*). Cronbach's alphas for social cynicism were .88 (German sample), .86 (Czech sample), and .70 (Cameroonian sample).

Value Orientations. As outlined above, value orientations were used as cultural markers in the present study. In total, 22 items of the Schwartz Value Survey (SVS; Schwartz, 1992) that

had proved to have equivalent meanings across cultures were used to assess standard indexes for the higher-order value types Openness to Change (eight items; e.g., choosing own goals) and Conservation (14 items; e.g., obedient). The importance of each of the items was rated on a 9-point Likert scale ($-1 = \textit{opposed to my values}$; $7 = \textit{of supreme importance}$). Cronbach's alphas for Openness to Change and Conservation were, respectively, .81 and .85 for the German sample, .74 and .81 for the Czech sample, and .82 and .75 for the Cameroonian sample.

Subjective Health. To assess their subjective health status, elderly people were asked to respond to five items covering different health-related aspects, such as evaluations of their general health status, the frequency of health-related problems (e.g., pain, minor complaints), and a comparison of their own health status to that of other same-aged people. Items were rated on a 6-point Likert scale ranging from 0 to 5 with various verbal anchors. Cronbach's alphas for subjective health were .78 for the German sample, .83 for the Czech sample, and .85 for the Cameroonian sample.

Measurement Invariance

Due to the cross-cultural nature of the study, measurement invariance had to be scrutinized (Van de Vijver & Leung, 1997). With respect to measures of cultural markers (i.e., the value orientations of Openness to Change and Conservation), we could abstain from an inspection of measurement invariance: The SVS is a standard instrument for cross-cultural research on values and has been successfully used in more than 80 highly diverse cultural contexts around the world, including the cultural contexts under consideration (e.g., Schwartz, 2006). Additionally, data on self-reported health status were not tested for measurement invariance in detail, as subjective health was used as a covariate in analyses only. To note, however, internal consistencies of both measures of value orientations and subjective health indicate that sets of items can be treated as measuring single latent variables within each of the cultural samples at hand.

Thus, measurement invariance was only examined for data on psychological constructs involved in the hypothesized moderation model, that is, n Aff-Int, relatedness, and social cynicism. First, measurement invariance was tested for self-report scales. Exploratory factor analyses (EFA; principle component analysis) on relatedness and social cynicism, respectively, were conducted separately for each of the three cultural samples. Regarding relatedness, it was shown that one item ("I pretty much keep to myself and don't have a lot of social contacts") should be excluded from further analyses as there was a non-significant factor loading (.06) within the Czech sample. All the remaining items significantly loaded on a single factor within each of the cultural samples. Cronbach's alphas for the shortened scale of relatedness were .70, .69, and .79 within the German, Czech, and Cameroonian sample, respectively.

With respect to social cynicism, EFAs (one-factor solution) indicated that two items showed negative factor loadings within the Cameroonian subsample ("It is rare to see a happy ending in real life"; "Opportunities for people to get wealthy promote dishonesty"). Thus, both items were dropped. The shortened scale of social cynicism had Cronbach's alphas of .88 (German sample), .84 (Czech sample), and .73 (Cameroonian sample).

Subsequently, measurement invariance of the shortened scales of relatedness and social cynicism was examined by computing multigroup confirmatory factor analysis. It was scrutinized whether the measurement model upholds by specifying a model including the two latent variables, namely, relatedness and social cynicism. In line with Kline (1998), who argues that the ratio of cases/observations to number of parameters to be estimated should be at least 10, item parcels were built for the measure of social cynicism to reduce the number of free parameters. Item parceling is an adequate procedure in structural equation modeling (SEM) procedures if unidimensionality of constructs at hand is established (e.g., Bandalos, 2002; for a discussion of pros and cons of item parceling, see Little, Cunningham, Shahar, & Widaman, 2002). Three parcels (six items each) were built by random assignment, resulting in homogenous samples that were similar in variance.

Thus, the measurement model included the two latent variables relatedness and social cynicism, which were measured by seven items and three parcels, respectively. In the model, latent factors were allowed to be correlated. We defined two increasingly restrictive measurement models: an unconstrained model with no equality constraints across cultural groups and an invariant loadings model with measurement weights constrained to be equal across cultural groups while variances and covariance of the two latent scores were estimated separately for each group. Analyses indicated that the unconstrained model (165 data points; 63 unknown parameters) adequately fit the data ($\chi^2/\text{degrees of freedom}$: 2.32; CFI: .92; RMSEA: .047). All items/item parcels significantly loaded on the specified factor with critical ratios (CR) ≥ 4.18 ($p < .001$). Also, the invariant loadings model with factor loadings constrained to be equal across cultural samples showed a good data fit ($\chi^2/\text{degrees of freedom}$: 2.21; CFI: .91; RMSEA: .045). Most importantly, the implementation of constraints on factor loadings did not lead to a significant increment of the χ^2 statistic ($\Delta\chi^2(16) = 24.08, p = .09$).

Finally, measures of n Aff-Int were screened for item/picture bias (i.e., differential item functioning) by use of analysis of variance (ANOVA; Van de Vijver & Leung, 1997). The dependent variable was the single item/picture score for n Aff-Int. Cultural group (three levels) and score level (three levels) were entered as the two independent factors. Score level was determined by splitting the total sample into three score-level groups of equal size (low, medium, high) based on individuals' total score for n Aff-Int across the six picture cards. A significant effect of score level is expected to be shown in analyses, as individuals at higher score levels ought to score higher on a given picture cue. In contrast, significant effects of cultural group and the interaction of cultural group and score level indicate bias.

To briefly summarize, analyses indicated item bias with respect to three picture cards (viz., *couple by a river*, *trapeze artists*, *man and woman with horse*). However, none of the effects ($\eta^2 \leq .03$) was large enough to be practically important ($\eta^2 \geq .06$; see Meiring, Van de Vijver, Rothmann, & Barrick, 2005). Given these findings as well as the recommendation that at least four picture cues ought to be used to gain a valid indicator of motive strength (Smith et al., 1992) and the structure-oriented focus of the study at hand, we refrained from removing either picture cue that showed slight indications of bias. To conclude, analyses on measurement invariance point to configural invariance, allowing us to meaningfully examine structural relationships among psychological constructs across cultural groups.

RESULTS

This section is organized as follows: In the first part, general statistics of the measures are given and correlations among measures are presented. Additionally, value orientations are tested for differences between cultural samples to justify the selection of cultural contexts, and effects of sociodemographic variables on the dependent variable (i.e., social cynicism) are examined. In the second part, the moderating effect of *n Aff-Int* on the relationship between relatedness and social cynicism is tested, with a particular focus on whether the hypothesized effect can be found within each of the cultural samples.

Part 1: Descriptive Statistics, Correlations, Mean Comparisons, and Covariates

Descriptive statistics of the measures are presented in Table 1.

To test differences between cultural groups in value orientation, we conducted ANOVAs for higher-order value types of Openness to Change and Conservation. As can be seen in Table 1, German participants scored significantly higher on Openness to Change than Czech and Cameroonian participants, $F(2, 590) = 72.09$, $p < .001$, $\eta^2 = .20$. Additionally, participants from all three cultural samples significantly differed from each other in Conservation, with the highest levels in the Cameroonian sample and the lowest levels in the German sample, $F(2, 575) = 108.76$, $p < .001$, $\eta^2 = .27$.

In Table 2, correlations of psychological measures are given for each of the cultural samples. As hypothesized, significant negative associations between relatedness and social cynicism were found within each cultural sample. In contrast, neither relatedness nor social cynicism significantly related to *n Aff-Int*.

Next, it was scrutinized by ANCOVA whether participants' sociodemographic characteristics and subjective health related to social cynicism. In doing so, participants' gender, level of education, and partnership status were entered as factors and age, number of children, and subjective health as covariates. No main and interaction effects of gender, partnership status, and level of education were found ($\eta^2 < .01$). There was no effect of

Table 1 Descriptive Statistics of Measures

	M (SD) GER	M (SD) CZ	M (SD) CAM
<i>n Aff-Int</i>	.42 (2.51)	.51 (2.31)	-.86 (1.54)
Relatedness	4.69 (.73)	4.72 (.78)	4.19 (.88)
Social cynicism	1.91 (.55)	2.28 (.49)	2.14 (.43)
Openness to Change*	4.18 _a (1.04)	2.99 _b (.99)	3.02 _b (1.37)
Conservation*	3.98 _a (1.01)	4.53 _b (.89)	5.20 _c (.60)
Subjective health	3.54 (.71)	2.98 (.81)	3.21 (.68)

Note. GER = Germany; CZ = Czech Republic; Cam = Cameroon.

*Different subscripts indicate significant differences ($p < .01$).

Table 2 Correlations Among *n Aff-Int*, Relatedness, and Social Cynicism

	1	2	3
1. <i>n Aff-Int</i> ^{1,2}	—		
2. Relatedness ^{1,2}	.06/.00/.04	—	
3. Social cynicism ¹	.00/-.10/-.10	-.16*/-.23**/-.19**	—

Note. ¹Correlations are given in the following order: German, Czech, and Cameroonian sample. ²As we will examine equivalence of relationships between social cynicism and both *n Aff-Int* and relatedness via structural equation modeling, we only examined strength of correlations between *n Aff-Int* and relatedness within each of the three cultural samples. By employing Fisher *r*-to-*z* transformation, no differences in correlation coefficients were found between cultural samples ($z_s \leq .53$).

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

number of children on social cynicism either. However, participants' age, $F(1, 605) = 11.64$, $p < .01$, $\eta^2 = .02$, and subjective health, $F(1, 605) = 15.50$, $p < .001$, $\eta^2 = .03$, significantly related to social cynicism: A higher age ($r = .15$) and lower levels of subjective health ($r = -.16$) were related to high levels of social cynicism. Thus, effects of age and subjective health were considered in further analyses on social cynicism.

Part 2: Test of Main Hypothesis on Moderation Effect Across Cultural Samples

In the following, we examined the study's main hypothesis by computing a hierarchical regression analysis (simultaneous entry method). Social cynicism was entered as the dependent variable. In Block 1, participants' age, subjective health ratings, and two dichotomous coded dummy variables for cultural groups (0/1) were entered to control for effects on social cynicism. Finally, relatedness, *n Aff-Int* (Block 2), and the interaction coefficient (Relatedness \times *n Aff-Int*; Block 3) were entered as predictors. Predictor variables were centered and the interaction term was computed with centered variables.

As shown in Table 3, higher scores of social cynicism were associated with a higher age of participants. While subjective health showed a negative but nonsignificant effect on social cynicism, cultural group was significantly associated with the reported level of social cynicism (for the direction of the effect, see Table 1). In Block 2, significantly more variance was

Table 3 Social Cynicism: Effects of Relatedness and *n* Aff-Int

Block	Predictor Variables	Social Cynicism			R^2	F-value
		β	β	β		
1	Age	.12**	.11**	.11**	.09	16.62***
	Health status	-.05	-.04	-.03		
	Culture (dummy 1) ¹	-.23***	-.17**	-.18**		
	Culture (dummy 2) ²	.05	.12*	.11*		
2	Relatedness		-.17***	-.19***	.12	14.78***
	<i>n</i> Aff-Int		-.04	-.02		
3	Relatedness × <i>n</i> Aff-Int			-.08*	.13	13.41***

Note. ¹Variable was coded German sample = 1; Cameroonian and Czech samples = 0. ²Variable was coded Czech sample = 1; Cameroonian and German samples = 0.

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

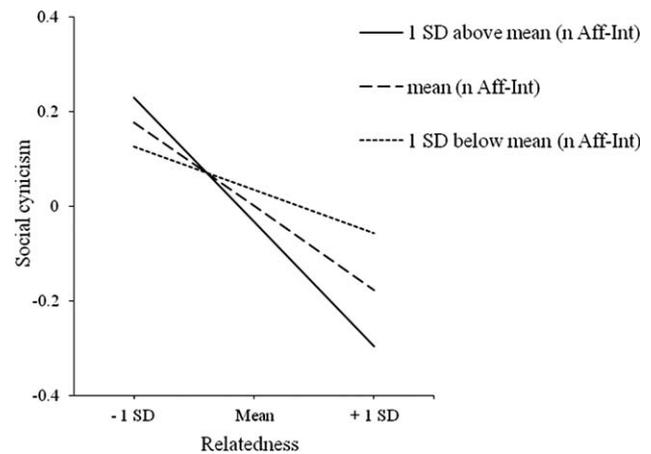
explained by the main effect of relatedness on social cynicism, $\Delta F(2, 609) = 10.113$, $\Delta R^2 = .03$, $p < .001$. The main effect of relatedness was, however, qualified by a significant interaction term entered in Block 3, $\Delta F(1, 608) = 4.65$, $\Delta R^2 = .01$, $p < .05$.¹

The nature of the significant interaction term ($f^2 = .01$) was examined by calculating scores for social cynicism at the mean value, and at values one standard deviation below and above the mean for predictor variables in the significant interaction term (see Cohen, Cohen, West, & Aiken, 2003). Subsequently, simple slope tests were performed with effects of covariates partialled out.

Tests indicated that the slopes corresponding to medium ($\beta = -.18$, $SE = .04$, $t_{612} = -4.45$, $p < .001$) and high levels of *n* Aff-Int ($\beta = -.26$, $SE = .06$, $t_{612} = -4.60$, $p < .001$) differed significantly from zero. Thus, lower levels of relatedness were associated with higher levels of social cynicism only among participants characterized by a pronounced *n* Aff-Int (see Figure 1).

Finally, it was examined whether findings obtained by regression analyses for the total sample hold true in each cultural sample. Equality of regression coefficients across the cultural groups was tested by multigroup path analyses with manifest variables in AMOS with maximum likelihood estimation. Relatedness, *n* Aff-Int, and the interaction term were treated as exogenous variables, whereas social cynicism (with age- and health-related effects partialled out) was regarded as an endogenous variable. Exogenous variables were allowed to be correlated with each other. Once equality constraints were set on regression coefficients across groups (intercepts were left free to vary), the constrained invariant effects model (i.e., structural weights model) gained six degrees of freedom (30 sample moments minus 24 unknown parameters).

Multigroup analyses indicated that the invariant effects model adequately fit the data gained in three distinct cultural contexts. The ratio of the chi-square value by degrees of freedom was .88. The comparative fit index (CFI = 1.00) clearly exceeded its critical value (.90); the root mean square error of

**Figure 1** Effects of relatedness and *n* Aff-Int on social cynicism.

approximation (RMSEA = .00) fell below its critical value (.06); and the expected cross-validation index (ECVI = .09) was lower than the critical value (.10), as determined by a saturated model. Moreover, a nested model comparison indicated that the invariant effects model did not show an impairment of fit when compared to the unconstrained model, $\Delta\chi^2(6) = 5.25$, $p = .51$. Referring to the invariant effects model, relatedness (critical ratio = -4.75 , $p < .001$, β s ranging from $-.15$ to $-.23$) and the interaction term (critical ratio = 2.38 , $p < .05$, β s ranging from $-.09$ to $-.11$) significantly related to social cynicism. No significant relationship to social cynicism was found for *n* Aff-Int (critical ratio = $-.81$). Thus, it can be concluded that the moderating effect of *n* Aff-Int on the relationship between relatedness and social cynicism holds true across cultural samples.^{2,3}

Supplemental Analyses

Given the large age range of our sample (59–93 years), it was tested by hierarchical regression analysis whether participants' age affects the moderation effect of *n* Aff-Int on the relation between relatedness and social cynicism (Block 1: subjective health, two culture dummies; Block 2: age, relatedness, and *n* Aff-Int; Block 3: three two-way interaction terms; Block 4: three-way interaction term). Predictors were centered, and two-way and three-way interaction terms were calculated with centered variables. Analyses indicated that age does not qualify the reported moderation effect of *n* Aff-Int: None of the two-way (β s $\leq .03$, $ps \geq .53$) nor three-way interaction terms that included age ($\beta = -.02$, $p = .59$) significantly explained variance in social cynicism.

In an additional analysis, it was examined whether subjective health modifies the moderation effect of *n* Aff-Int on the relation between relatedness and social cynicism (Block 1: age, two culture dummies; Block 2: subjective health, relatedness, and *n* Aff-Int; Block 3: three two-way interaction terms; Block 4: three-way interaction term). Findings verified that subjective health does not qualify the moderation effect of *n* Aff-Int:

Neither the two-way interactions that included subjective health (β s = $-.01$ and $.04$, $ps \geq .28$) nor the three-way interaction term ($\beta = .01$, $p = .73$) were significant.

Given the argument that social cynicism might block the realization of *n* Aff-Int and thus result in lower levels of relatedness, it was finally tested whether social cynicism moderates the link between *n* Aff-Int and relatedness. Findings from hierarchical regression analysis controlling for cultural group (two culture dummies) with centered variables do not support such an argument for the study at hand: The interaction term (Social Cynicism \times *n* Aff-Int) does not explain additional variance in relatedness ($\beta = -.06$, $p = .07$).

DISCUSSION

Based on the argument that the development of social cynicism is fostered by a frustration of the need for affiliation-intimacy (cf. Wong et al., 2010) and that the strength of the implicit affiliation-intimacy motive moderates the effects of such a need frustration (Hofer & Busch, 2011b), the present study examined whether the implicit affiliation-intimacy motive moderates the association between the frustration of the need for affiliation-intimacy (low scores on relatedness) and social cynicism. Indeed, such a moderation effect was found in samples from Cameroon, the Czech Republic, and Germany: Given a high implicit affiliation-intimacy motive, low relatedness was related to social cynicism, which was not the case for a low implicit affiliation-intimacy motive. This pattern of results was found across three samples from cultures that were demonstrated to differ from each other in the cultural marker variable of value orientations in a meaningful way and can thus be widely generalized.

Present Results

The present results add to a growing literature on how implicit motives serve as a weighing disposition determining the consequences of other psychological features. For example, various studies have found that goal pursuit is associated with well-being depending on how well the goal matches the person's implicit motive (e.g., Brunstein, Schultheiss, & Grässmann, 1998). Similarly, Hofer and colleagues (Hofer & Busch, 2011a; Hofer, Busch, & Kiessling, 2008) showed that need satisfaction was associated with general and domain-specific well-being only when the corresponding implicit motive was high. That is, evidence accumulates that the strength of an implicit motive moderates the benefits that need satisfaction brings.

On the other hand, implicit motive strength should also moderate effects at the other end of the dimension of need satisfaction versus frustration. That is, for people who have a weak motive, a failure to satisfy their need should have less severe consequences than for people who have a strong motive. Indeed, Hofer and Busch (2011b) showed that under circumstances of need frustration, those with a strong implicit affiliation-intimacy

motive reported more envy and indirect aggression than those with a weak implicit affiliation-intimacy motive.

The present results confirm the findings by Hofer and Busch (2011b) and expand them in several ways: First, with the Czech Republic, a third cultural context was included in addition to Cameroon and Germany, thus increasing confidence that implicit motives have equivalent effects independent of participants' culture.

Second, the present study applies implicit motives to a sample of elderly people. Implicit motives have rarely been studied in the elderly (see McClelland et al., 1998, for an exception). In this context, it is remarkable that tentative evidence suggests that the implicit affiliation-intimacy motive seems to decrease over the life span (Veroff, Reuman, & Feld, 1984), which seems hardly compatible with predictions of developmental theories such as the socioemotional selectivity theory (Carstensen et al., 1999): This theory argues that with a decreasing future time span, the motivation to seek close and emotionally rewarding interpersonal contact increases. While it is up to future research to determine whether there truly is a decline in the implicit affiliation-intimacy motive with time, the present results suggest that it might make sense to consider individual differences in motive strength in other theories as well. For example, while an induced limit to perceived future time might indeed increase the motivation to have contact with someone close, the actual benefits of having such contact might differ according with implicit motive strength.

Third, taken together with Hofer and Busch's conclusions (2011b), the present findings suggest that need frustration might spur a vicious circle. It might just be those people who are high in the implicit affiliation-intimacy motive and thus have a strong desire for interpersonal contact who might react to rejections or disappointments in a way that even further decreases their chances of having such contact: They tend to become envious, aggressive, and socially cynical. As corresponding behavior is required to satisfy one's need for affiliation-intimacy (Schüler et al., 2008), envy and social cynicism might be just the way to drive people even further away and thus have one's need for affiliation-intimacy more and more frustrated. Longitudinal studies examining what the long-term consequences of such a development are would be fruitful endeavors for future research.

LIMITATIONS AND OUTLOOK

In general, it is a limitation of the present study that results were obtained in a cross-sectional design. Attempts at replicating the effect presented here might make use of longitudinal or experimental designs. For example, participants might be confronted with experiences of rejection. Being more sensitive toward rejection, participants with a strong implicit affiliation-intimacy motive should show a more pronounced reaction than those with a weak implicit affiliation-intimacy motive. Such a procedure would also allow observing participants' behavior instead of relying on their self-report. Frustrating people with a strong

implicit affiliation-intimacy motive might show increased rejecting behavior themselves, such as gossiping, insulting, or devaluating others.

While the moderating effect of motive strength on effects of need frustration has been shown for the implicit affiliation-intimacy motive, the implicit achievement and power motives have not yet been examined in this context. For example, when their strong implicit power motive is frustrated by refusing them prestigious or influential positions, people might feel unjustly treated and become more cynical toward other people and social institutions. Indeed, the phenomenon of power stress occurs just when an opportunity to exert power is thwarted and is stronger for people high in the implicit power motive than for people with a weak implicit power motive (e.g., Fodor, Wick, & Hartsen, 2006).

A remark ought to be made concerning the PSE picture set employed here. While no picture cue was strongly biased, the presence of bias nevertheless prevented a meaningful interpretation of cultural mean differences in motive strength. While more and more information on how to compile a picture set is accumulating (e.g., Schultheiss & Pang, 2007), a lot still needs to be done in this area. As we have used various cultural samples in addition to elderly instead of young adults, the applicability of what is known concerning picture cue selection was limited for the present study. More research on such “exceptional” samples is required to extend the scope of implicit motive research.

Finally, we would like to point out that our supplemental analyses strengthen our finding, particularly in that the alternative model with social cynicism as a moderator on the relation between the implicit affiliation-intimacy motive and relatedness did not find any empirical evidence. However, concerning age, our sample is restricted to older participants. Thus, while our argument is that a moderating effect of motive strength on (positive and negative) consequences of need satisfaction is a general mechanism, in the present study we tested the effect in an older sample because satisfying social relationships are an integral part of successful aging. However, it might be worthwhile to have another look at whether age affects the moderating effect presented above by expanding future study samples with younger participants. Consequences of a thwarted need satisfaction such as social cynicism might be stronger in old age, as people might find that they are continually losing their family and old friends and simultaneously find it less attractive to establish new contacts or find themselves less able to do so due to increasing health problems.

In sum, the present study adds to the evidence that the strength of an implicit motive plays an important role in the affective and behavioral consequences of need frustration: Our findings indicate a moderating effect of the implicit affiliation-intimacy motive on the relation between need frustration and social cynicism across three cultural samples. Moreover, these results have been found in elderly people, demonstrating that the moderating effect of implicit motive strength is active at a later age as well. We hope that the present study will serve to initiate

more research on the role of implicit motives across the complete life span.

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Notes

1. Regression analyses were rerun without covariates in Block 1. The exclusion of covariates from analyses did not alter the findings on the significant effects of relatedness and the interaction on social cynicism.
2. To further scrutinize the robustness of the moderation effect across cultural samples, multigroup path analyses were rerun by consecutively constraining main effects of n Aff-Int and relatedness (Step 1) and the interaction effect (Step 2) to be equal across cultural groups. Nested model comparisons showed that the invariant main effects model (Step 1) did not show an impairment of fit when compared to the unconstrained model, $\Delta\chi^2(4) = 2.13, p = .71$. Furthermore, the implementation of constraints on the interaction effect (Step 2) did not lead to a significant increment of the χ^2 statistic, $\Delta\chi^2(2) = 3.12, p = .21$.
3. Parameters of the three unconstrained models indicated nonsignificant links between n Aff-Int and social cynicism (critical ratios ≤ -1.56). However, social cynicism was significantly predicted by relatedness in the three cultural samples (critical ratios ≥ -2.12). While the interaction term significantly relates to social cynicism in the Czech and Cameroonian subsamples (critical ratios ≥ -1.99), it did not reach a level of significance in the German subsample (critical ratio = .33). Yet, analyses verified that the overall moderation effect is significant and does not vary significantly across cultural groups.

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