The Implicit Power Motive and Sociosexuality in Men and Women:

Pancultural Effects of Responsibility

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Abstract

Research has shown that an individual’s implicit power motive relates to two types of behavioral clusters - either prosocial, socially appropriate behaviors or profligate, impulsive behaviors. The present study examined the relationship between individuals’ implicit power motives and their tendency to engage in sexual activities without strong emotional ties, i.e., sociosexuality. For men, but not for women, this relationship was hypothesized to be moderated by an implicit disposition for responsibility. Whereas most research has been limited to Euro-American contexts, the present study examined the relationship between power motive, disposition for responsibility, and sociosexuality among participants recruited in Cameroon, China, Costa Rica, and Germany. Explicit Big Five measures of personality were controlled for. For women, only a main effect of responsibility on sociosexuality was found across cultural groups; for men, the association between Power motivation and sociosexuality was moderated by responsibility, independent of cultural group. Traits of agreeableness and conscientiousness were systematically related to lower levels of sociosexuality. Effects for both implicit and explicit measures of personality suggest universality in the processes associated with more enactments of sociosexuality, confirming in part the hypothesized role of responsibility in channeling the realization of the power motive into less impulsive activities.

Keywords:
Need for power; Responsibility; Sociosexuality; Culture; Gender; Traits
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According to Russell (1938), power represents the key concept in social science. It is a vague and polysemous concept that is difficult to grasp, however, since the variety of guiding questions, units of analysis, and outcomes of interest are each related to particular emphasizes in its definition (Keltner, Gruenfeld, & Anderson, 2003). In the present study, rather than highlighting individuals’ actual exercise of power, we focus on their need for power (n Power; Winter, 1973) and its behavioral correlates. Considering both participants’ gender and culture of origin, we examined how far individuals’ n Power relates to their tendency to engage in uncommitted sexual activity, and whether an individual’s disposition for responsibility is taming that individual’s need for power, i.e., is shaping the behavioral realization of the power motive (Winter, 2006).

Striving for Power

People strive either consciously, as mirrored for example in their values and goals, or unconsciously, as reflected in their implicit need for power, to control others, exercise impact, and acquire status. Ideas that there are unconscious psychological forces helping to explain the complex pattern of human functioning have been ever-present in psychology (e.g., Freud, 1959; Kuhl, 2001). Recent years have witnessed a renewed interest in non-conscious aspects of cognition, emotion, and behavior (Kihlstrom, 2002). According to McClelland, Koestner, and Weinberger (1989), consciously represented motives are shaped by explicit socialization of what is socially desirable in a given sociocultural niche. By contrast, implicit social motives develop based on learning by processes of classical and instrumental conditioning. This individual experience creates a disposition to have an affectively-toned, goal-centered, associative network aroused and activated (Winter & Stewart, 1978). It is assumed that implicit motives are primarily shaped during early stages of cognitive development when language mastery has not yet been established (McClelland &
Pilon, 1983). In consequence, it is argued, they operate outside of conscious awareness and control.

Assuming the existence of a limited number of basic human needs, motivational theorists have concentrated on the so-called Big Three, i.e., individuals’ disposition to strive for success in competition against a standard of excellence (need for achievement; McClelland, 1985) and their concerns both for having warm, close relations with others (need for affiliation; Heyns, Veroff, & Atkinson, 1958), and for having impact on the behavior or emotions of other people or on the world at large (need for power; Winter, 1973). They argue that these motive systems have evolved because they serve to enhance personal survival and reproductive success (MacDonald, 1991; Winter, 1996). For example, n Power is considered to involve fitness maximizing strategies (e.g., privileged access to mates and material resources by high-status males).

Implicit motives are an integral component of human psychological equipment (Zurbriggen, 2000). There is, however, latitude for variation in a given motive’s strength among members of a particular (cultural) group arising from biological and educational variations (Hofer & Bond, 2008). The little research that is available on the developmental antecedents of n Power suggests that a high need for power among adults relates to mothers’ permissiveness for sex and aggressive play in early childhood (McClelland & Pilon, 1983; Parker, 1962). Also, experiences of having impact early in life, e.g., assertion against powerful adults (Veroff & Veroff, 1980), seem to foster the development of a pronounced implicit power motive.

**Behavioral Correlates of n Power**

Research on behavioral correlates of n Power in adults has provided a substantial body of evidence that this motive can be channeled through a wide array of actions. In principle, actions associated with n Power reflect two higher-order behavioral clusters (see McClelland, 1970, on the two faces of power). It has become common practice to differentiate between the
socialized (prosocial, socially appropriate) and the personalized (antisocial, profligate, impulsive) concerns that can inform the basic need for power (McClelland, 1970; Winter, 1973; but see Magee & Langner, 2008, who argue for two distinct motives).

Thus, individuals high in power seem to engage themselves in more responsible forms of impact-seeking to promote the benefit of others: they aspire to hold office in organizations (McClelland & Boyatzis, 1982), are politically active (often becoming charismatic leaders; McClelland & Burnham, 1976), and show enhanced involvement in the guidance of successive generations. The last they realize by choosing a profession that allows them to teach others (Winter, 1973) or by engaging in other forms of generativity that help other people to flourish achieve and to be happy (Hofer, Busch, Chasiotis, Kärtner, & Campos, 2008; Peterson & Stewart, 1993).

By contrast, seeking to have impact and influence can also be expressed in socially irresponsible, egoistic, sometimes even disruptive ways. For example, individuals high in power are often concerned with having their way by impressing, controlling, dominating, and exploiting others. There is evidence that they negotiate exploitatively (Schnackers & Kleinbeck, 1975), increase their social visibility by acquiring high-status possessions, get into more verbal and physical fights, and engage more in profligate, high-risk impulsive behaviors, such as gambling, drinking, and drug use (McClelland, Davis, Kalin, & Wanner, 1972; McClelland & Watson, 1973; Winter, 1973, 1988).

Relatedly, power has been linked with various measures of sexual attitudes and behavior: higher levels of power were correlated with a greater number of sexual partners, more frequent sexual activity, often with different partners, earlier sexual intercourse, and a higher frequency of reading pornographic magazines (McClelland, 1975; Schultheiss, Dargel, & Rohde, 2003; Winter, 1973). Recently, Yost and Zurbriggen (2006) reported a positive relationship between individuals’ tendency to engage in uncommitted sexual activity and the strength of their implicit power motive.
In this study, we focus on sociosexuality as criterion for the study of how the implicit power motive is realized behaviorally for several reasons: as shown in the previous paragraph, various aspects of sexual behavior are associated with \( n \) Power among Euro-American participants. Furthermore, the concept of sociosexuality has already been applied in research across cultures (e.g., Schmitt, 2005). This empirical work, however, has predominantly highlighted the link between consciously represented traits and sociosexuality (e.g., Schmitt & Shackelford, 2008). Finally, research on sexual behavior evidently points to the significance of gender when examining human behavior (e.g., Winter, 1988). Thus, the design of the present study permits our examining the interplay of personality constructs (implicit motives; traits) and sociosexuality for male and female participants across diverse cultural groups.

*Gender differences in power-motivated behavior.* There is considerable evidence that the nature and level of interest in power do not differ between women and men (Stewart & Winter, 1976; Winter, 1988). Nor do men and women differ substantially in behavioral correlates of socialized power (Winter, 1988). However, empirical research suggests gender-related differences in expansive, profligate behavioral correlates of the power motive (Winter & Stewart, 1978): measures of aggression, alcohol consumption, drug use, and gambling generally show significant associations with \( n \) Power among men only, as do measures of unrestricted sexuality.

McClelland (1975) argued that men high in \( n \) Power have an emotionally assertive approach to life, while women with a pronounced implicit power motive focus rather on building up their internal resources, partly in order to avoid anticipated male exploitation. Other explanations of gender differences in behavioral domains associated with \( n \) Power accentuate traditional sex roles, norms, institutional rules, and life circumstances that define certain behavior as (in-)appropriate for women (Hirschowitz, 1987; Jenkins, 1994; Stewart & Chester, 1982): aggressive, profligate, impulsive actions seem to be congruent with the
traditional male role, but incongruent with the traditional female role (Bond, 2007). Thus, profligate behavior on the part of women may point to deviance, and vulnerability to being socially isolated and exploited (Winter, 1988).

Gender-related differences in expansive, profligate behaviors associated with the power motive do not indicate that women generally fail to show these types of behaviors. Rather, they manifest them in order to satisfy other motivational impulses (Winter, 1988; see Zurbriggen, 2000, on the association between women’s need for affiliation and sexual aggression).

Taming Power (in Men)

Numerous scholars have tried to identify additional personality features that condition the behavioral realization of $n$ Power. For example, a strong implicit need for power was found to be associated with profligate sexual behavior, aggression, and refusal to hold office in institutions only when combined with low activity inhibition, a personality component indicating ego maturity (McClelland, 1975; see also McClelland et al., 1972; McClelland, 1985). Affiliative concerns represent another proposed candidate for taming the expression of power (McAdams, 1985; Winter, 2006). For example, a motive pattern characterized by high $n$ Power and high $n$ Affiliation has been shown to be related to peaceful resolutions of international conflicts (Winter, 1993; see also Langner & Winter, 2001), suggesting that high levels of $n$ Affiliation block aggressive impulses of the power motive (McClelland, 1985).

Finally, responsibility (Winter & Barenbaum, 1985), conceived as a stable cluster of cognitions (beliefs and values) strongly influences the way the power motive is behaviorally expressed. Winter and Barenbaum (1985) showed that individuals characterized by a strong need for power engage in more profligate, impulsive behaviors if they also lack responsibility. However, these individuals act in socially useful ways and are effective leaders when their level of responsibility is high (Winter, 1991, 2006). It has been suggested that growing up with younger siblings and becoming a parent relates to responsibility that
appears to channel the power motive into more socially appropriate forms of impact-seeking (Winter, 1988).

Aims and Hypotheses of the Present Study

A main focus of the present study is the examination of the relationship between $n$ Power and the endorsement of casual sex (sociosexuality). In general, implicit motives direct spontaneous behavior (McClelland et al., 1989). As the implicit power motive is gender-specifically associated with impulsive behavior, we hypothesize a positive link between profligate sexuality and the strength of the implicit power motive among men. In contrast, we expect no significant association for women. Given that responsibility influences the behavioral expression of $n$ Power, we further assume that an individual’s level of responsibility will moderate the relationship between sociosexuality and $n$ Power in men, i.e., a positive link between sociosexuality and $n$ Power will only be found for men low in responsibility. Considering women, we assume that their level of responsibility negatively relates to their sociosexuality.

A second focus of the study requires its cross-cultural design. The postulated universality of human needs but also their potential for culture-bound programming have very early been acknowledged in research on implicit motives (e.g., McClelland, 1961; McClelland, Atkinson, Clark, & Lowell, 1953). Yet, most of our knowledge about human functioning is based on studies (most often using student samples) conducted in Euro-American cultural contexts. Thus, unlike the research investigating correlates of $n$ Power at the individual level reviewed above, the present study does so in a cross-cultural setting. Analyzing data from respondents of widely different cultural traditions would allow us to draw tentative, but empirically grounded conclusions about their universality. For exploratory purposes, therefore, we hypothesize that, across cultural groups, similar relationships between $n$ Power, responsibility, and sociosexuality will be found.
There is decisive evidence that traits also co-vary with a variety of sociosexual attitudes and behaviors in various cultural groups (Schmitt & Shackelford, 2008; Wright & Reise, 1997). Thus, the influence of personality traits, explicitly measured, on sociosexuality will be controlled for in our analyses to demonstrate the incremental validity of implicit measurements over and above that provided by the explicit measurement of such traits.

Method

Sample

Selection of cultures. When aiming to test universal relationships among measurements, data need to be assessed from cultural samples representing a wide range of ecological contexts as well as socio-cultural orientations - norms, beliefs, and values (Van de Vijver & Leung, 1997). There are many types of constructs typically used in research to differentiate between cultural samples: for example, individualism/collectivism and power distance at the national or group level (Hofstede, 2001), or (prototypical) self-construal (Kağıtçibaşi, 2005) at the individual level. Here, we refer to another extensively used psychological construct, i.e., guiding principles in life or values (Schwartz, 1992) that show substantial overlap with other cultural markers at both the national and individual levels (e.g., Triandis, 1996).

For the present study, samples from Germany, Cameroon, China, and Costa Rica were selected. Recent research has provided conclusive evidence that German, Costa Rican, Chinese, and Cameroonian participants clearly differ from each other in their value orientations (e.g., Hofer et al., 2008; Hofer, Busch, Bond, Kärtner, Kiessling, & Law, in press; Hofer, Chasiotis, Friedlmeier, Busch, & Campos, 2005). Cameroonian, Chinese, and Costa Rican participants put more stress on values that represent a concern for harmony in interpersonal and person-to-group relations by emphasizing self-restriction, preservation of customs, and protection of stability than do German participants; Germans, Chinese, and Costa Ricans reported more commitment to values that reflect a striving for autonomy and self-direction than do Cameroonian.
Participants. In the light of ongoing migration, only native participants were included in the given cultural samples. Considering the multi-ethnic character of the nation, sampling of participants was restricted to ethnic Grassfield Bantus from the Anglophone North-West province in Cameroon (see Nsamenang & Lamb, 1995). Data collection in Cameroon was conducted in Bamenda, the capital of the North West province. Chinese participants were recruited in Hong Kong and Kai Feng. Costa Rican and German data were collected from participants in San Jose, the capital of Costa Rica, and Osnabrück, a major city in Lower Saxony, respectively.

In total, adequate data were collected from 813 participants: 275 of these were from Cameroon (137 females), 171 from China (99 females), 138 from Costa Rica (87 females), and 229 from Germany (126 females). Cultural samples were thus reasonably balanced concerning participants’ gender. Age of participants ranged from 18 to 62 years ($M = 35.06; SD = 7.83$). Women and men did not differ in mean age. However, German participants ($M = 36.62; SD = 7.77$) and Cameroonian participants ($M = 33.80; SD = 6.72$) significantly differed in their mean age ($F_{3, 809} = 6.15; p < .01; \eta^2 = .02$). Eta-squared ($\eta^2$) is reported as index of the strength of association; $\eta^2$s of .01, .06, and .14 can be interpreted as small, medium, and large effect size, respectively.

Altogether, 611 participants reported that they had a steady partner (married: $n = 353$); 202 participants stated that they were currently not engaged in a steady partnership. Of the study participants, 380 were childless, 426 had at least one child (range: 1 to 7; total sample: $M = 1.03; SD = 1.32$), and seven participants did not respond to the question. Whereas the proportion of childless participants averaged 50% in the samples from Cameroon, Costa Rica, and Germany, only about one-third of the Chinese participants reported themselves to be childless ($\chi^2_{3} = 13.41; p < .01$). Considering birth order, 480 participants reported that they had grown up with younger siblings, 326 had no younger siblings, and seven did not indicate information on siblings. Cultural samples were balanced concerning birth rank.
Among the total sample, 307 participants (37.8% of the sample) had less than secondary school education (the number of participants with a low level of education was 125 in Cameroon, 62 in China, 11 in Costa Rica, and 109 in Germany), and 506 participants (62.2% of the sample) had either a secondary school or university education.

Procedure

Recruitment in Germany was done via ads in local newspapers or notes attached to blackboards of public buildings, like shopping malls. At the other research sites, participants were contacted with the help of local collaborators. All participants were volunteers and were guaranteed that any information given would be treated confidentially and anonymously. German, Cameroonian, and Chinese study subjects received monetary compensation proportional to average differences in GDP per capita. Such compensation is not expected in Costa Rica. In Germany data collection was done on university premises; in the other regions, it was mostly conducted at the participants’ homes.

A local research assistant familiar with all instruments applied was present while the participant worked through questionnaires to help clarify any questions that arose. Instruments were administered in either German (Germany), Chinese (China), Spanish (Costa Rica), or English (Cameroon). Although English is not the native language in the Northwest province of Cameroon where data were collected, it represents the official language and is exclusively used in educational institutions and predominantly so in everyday life. Moreover, only very few people are able to read or write in their native tongues that represent the colloquial languages in Cameroon.

Measurements

Test methods were administered to participants individually. First, the implicit power motive and responsibility of the participants were assessed. Next, the questionnaires on personality traits, value orientations, and sociosexuality were given. Finally, participants provided information on their socio-demographic characteristics. Given their extensive use in
cross-cultural research, the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) and the Schwartz Value Survey (SVS; Schwartz, 1992) were available in their Chinese, English, German, and Spanish versions. Similarly, English, Spanish, and German versions were at hand for the Sociosexual Orientation Inventory (SOI; Simpson & Gangestad, 1991), for the instructions of the picture-story exercise (PSE; McClelland et al., 1989), and for the assessment of socio-demographic information. The lacking Chinese versions were translated from their original English versions by bilingual research assistants in China; the quality of the translated material was ensured by a back-translation procedure.

*Implicit power motive.* Need for power was assessed by a picture-story exercise using instructions recommended by Smith, Feld, and Franz (1992): participants were told to imagine what is going on in the depicted situation and write a story about the people shown in the picture. Each picture card was shown for 30 seconds. Subsequently, participants were given five minutes to write a story based on the picture stimulus. 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 level of power motive imagery that they reflected according to the well-established and cross-culturally employed scoring system developed by Winter (1994; see also for scoring rules). Concern for power is coded for responses indicating the impact, control, or influence that any person or social institution mentioned in the story intentionally has on another person, group, or the world at large (e.g., forceful determination of behavior, provisioning of advice, or impressive displays, etc.).

Cross-cultural research often necessitates translation of test methods, but also of participants’ written and oral responses from one language to another one. The latter can produce problems related to conceptual and functional equivalence, as there is no one-to-one relationship between language and meaning (Peña, 2007; Temple & Young, 2004). With respect to the study at hand, picture stories assessed in Costa Rica and China could not be
coded by German coders due to their inadequate language proficiency in Chinese or Spanish. Thus, picture stories were coded for *n* Power (and responsibility) by one Chinese and six Costa Rican assistants to circumvent translation-related issues that might threaten the validity of data.

Cameroonian and German picture stories were coded by five, well-trained German research assistants with excellent skills in motive coding due to their past involvement in a number of studies on implicit motives. All German assistants achieved percentage agreements of 85% or better in their responses to the standard training material (Winter, 1994).

Initially, story sets of 20, randomly selected participants from Germany (10) and Cameroon (10) were scored by all German assistants. To determine interrater reliability intraclass correlations (ICC; see Shrout & Fleiss, 1979) were calculated. Applying a two-way, random effects model with absolute agreement ICC for *n* Power was .85 (single measure reliability). As interrater reliability was very high, each assistant independently coded a different set of the remaining picture stories. Any scoring difficulties were resolved by discussions in weekly team meetings.

Like German assistants, the Chinese and the six, Costa Rican assistants achieved percentage agreements of 85% or better in their responses to the standard training material (Winter, 1994). Additionally, during research stays in Hong Kong/China and Costa Rica by the first author, local assistants were further trained in coding of *n* Power (and responsibility) with the help of protocols from picture stories that were provided by university students in both research areas. Subsequently, assistants scored further training sets and received detailed feedback on their coding via email before starting to analyze data of the present study.

With respect to the Chinese data, 15 picture story sets were initially coded by the Chinese assistant, translated into English, and coded by the first author to examine the (intercultural) interrater reliability. ICC for *n* Power was .91. Given this high level of inter-judge reliability,
the Chinese assistant independently coded the remaining data. Any occasional scoring
difficulties were resolved via email correspondence.

The Costa Rican data was scored by six assistants who worked in three coding teams. Each team was randomly assigned to a set of picture story exercises, and each story was scored by both assistants. Participants’ final scores were determined in regular meetings by comparing single codings, discussing problematic cases for motive imagery (and responsibility), and subsequently assigning a final score for each picture story.

At first, twenty story sets from Costa Rica were translated and coded by a German assistant. Total ICC was .88, with scores for the single teams ranging from .85 to .88 (six and seven sets, respectively). Subsequently, Costa Rican assistants independently coded the remaining data. Any scoring difficulties were resolved in team meetings and via email correspondence with the first author.\(^1\)

The number of power motive imageries totaled across the five stories ranged from 0 to 15 (\(M = 2.57; SD = 2.19\)) for the 813 participants. To meaningfully compare the stimulus pull of the picture cards and, in a second step, motive strengths across cultural groups, the number of Chinese characters was transformed into a word count: the total number of characters was multiplied by a constant (number of characters x .7 = number of words). This constant was calculated based on 165 Chinese sets of picture stories (taken from the present study and Hofer, Busch, Bender, Li, & Hagemeyer, in press) that had earlier been translated into English.

Across participants, the word count (transformed for the Chinese sample) for the five picture-cue stories ranged from 105 to 1146 (\(M = 391.36; SD = 157.38\)). As the number of power motives scored from each story was significantly correlated with story length (\(r = .48; p < .001\)), the influence of protocol length on total motive scores was corrected by regression across cultural groups (see Smith et al., 1992).
Equivalence of measurements for $n$ Power across cultural groups. As evidence for the cross-cultural applicability of picture cards is still limited, measurements of $n$ Power were scrutinized for item bias. Item (picture) bias was examined separately for each picture cue by use of analysis of variance (Van de Vijver & Leung, 1997). In these analyses, the single picture score for $n$ Power (raw score corrected for story length) was the dependent variable. Cultural group (4 levels) and score level (3 levels) were the two independent factors. The composition of the three, equally-sized, score-level groups (low-medium-high) was based on the $n$ Power score totaled across the five picture cards for the total sample.

Whereas a significant effect of score level is expected as individuals at higher score levels score higher on a given picture cue, the significance of cultural group and the interaction of cultural group and score level indicates item bias - a significant effect of culture indicates uniform bias, i.e., across all score levels individuals from one cultural group score higher/lower than individuals from other cultural groups, even if they have similar total test scores; a significant interaction term indicates non-uniform bias, i.e., the difference between cultural groups depends on the level of the underlying trait (Van de Vijver & Leung, 1997).

None of the analyses pointed to non-uniform bias; the interaction terms (culture x score level) showed no significant effects ($F_{6,801} \leq 1.07; \eta^2 < .01$). Furthermore, only the picture card, trapeze artists, showed uniform bias, as indicated by a significant main effect of culture ($F_{3,801} = 8.71; p < .001; \eta^2 = .03$). As recommended by Welkenhuysen-Gybels and Billiet (2002), the five-picture set was reduced by removing the single biased item; ability indexes and score level groups were recalculated, and analyses were rerun. In the analyses that followed, it was found that the remaining four picture cards proved to be free of both uniform ($F_{3,801} \leq 1.94; \eta^2 < .01$) and non-uniform bias ($F_{6,801} \leq 1.62; \eta^2 < .01$).

For the bias-free set of pictures, the total number of words ranged from 84 to 928 ($M = 312.10; SD = 127.71$). Totaled across these four stories, the number of power motive imageries ranged from 0 to 11 ($M = 1.89; SD = 1.85$). The impact of protocol length on total
motive score ($r = .47; p < .001$) was then eliminated by regression across cultural groups to determine each participant’s final score for $n$ Power (see Table 1).

Responsibility. Stories written to the bias-free set of pictures were also scored for each individual’s level of responsibility. In doing so, an empirically derived measure for responsibility developed and validated by Winter and Barenbaum (1985; for scoring rules, see Winter, 1989) was used. Responsibility is conceived as a stable disposition that, unlike aroused motives, does not energize and direct behavior, but channels or blocks the way in which motives are behaviorally expressed (Winter, 1992), as has been shown for the power motive (e.g., Winter & Barenbaum, 1985).

According to the scoring system, there are five scoring categories for this type of prosocial orientation. Responsibility is scored whenever legal or moral standards are used to describe the actions or people depicted in the story produced by the respondent. Furthermore, it is scored when a person, group, nation, or other collectivity is described as obliged to act or not to act because of internal or impersonal forces, as helping someone else or being sympathetically concerned about another person, as having some inner concern about possible negative consequences of one’s own action or inaction, or as critically evaluating one’s own character.

Stories were content coded for responsibility by the same trained German (Cameroonian and German data), Chinese, and Costa Rican assistants who had achieved percentage agreements of 85% or better in their responses to responsibility-training material (Winter, 1989). All research assistants received additional schooling in coding of responsibility in training sessions using picture stories written by local university students. Story sets used to calculate agreement on Power imagery were also used to evaluate inter-rater reliabilities (ICC) for responsibility. The ICC was .87 among German assistants, .87 between the Chinese assistant and the first author, and .84 (ranging from .83 to .85 across the three coding teams).
among the Costa Rican and German assistants. As for $n$ Power, scoring difficulties were resolved in team meetings and via email correspondence.

The number of responsibility codings across the four stories ranged from 0 to 7 ($M = 1.01; SD = 1.32$). The impact of word count on responsibility ($r = .35; p < .001$) was corrected by regression across cultural groups (see Table 1).

A screening of the data indicated that measures of $n$ Power and responsibility were not normally distributed (positive skewness). Hence, variables were transformed by the use of log transformation (Tabachnik & Fidell, 1996). As this transformation of variables did not substantially alter the results of subsequent analyses, results will be reported with untransformed data.

**Personality traits.** The NEO-FFI, a shortened version of the NEO Personality Inventory-Revised (NEO PI-R; Costa & McCrae, 1992), was administered to assess personality traits that represent tendencies to show consistent patterns of thoughts, feelings, and actions. The 60 items of the self-report questionnaire allow a reliable measurement of five domains of adult personality (neuroticism, extraversion, openness to experience, conscientiousness, and agreeableness). The items are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and are balanced to control for acquiescence response set. Using the NEO PI-R, the structure of the five factor model of personality has been replicated to date in more than 30 cultures (Allik & McCrae, 2004; McCrae & Allik, 2002). Thus, it appears to represent a human universal even if, for example, indigenous research on personality in China has provided evidence for the existence of an additional dimension beyond the Five-Factor Model, labeled *Interpersonal Relatedness* (Cheung, 2006).

Given conclusive evidence on the applicability of the measurement across widely differing cultural groups, the use of standard language versions, and the function of personality traits in the present study (control variables without aiming at mean comparisons across cultural groups), equivalence of trait measurements was not scrutinized in detail.
Ranging from .61 to .77, none of the scales showed an internal consistency that falls below an acceptable $\alpha$ of .6 (Nunnally, 1978).

*Guiding principles in life.* In the present study, the Schwartz Value Survey (Schwartz, 1992) was used to test the assumption that participants from the selected cultural groups meaningfully differed in psychological characteristics, in this case value orientations. The SVS is widely used in cross-cultural research on value orientations (e.g., Schwartz & Sagiv, 1995). The items of the questionnaire represent ten universal value types (e.g., achievement, hedonism) that reflect four higher-order value types: *Openness to Change* (composed of first-order value types: self-direction and stimulation), *Conservation* (conformity, security, and tradition), *Self-Enhancement*, and *Self-Transcendence*. Schwartz (1994) argues that Openness to Change and Conservation, which focus on individual autonomy and endorsement of group belongingness, respectively, are key variables when examining the cultural dimension of Individualism/Collectivism (see also Triandis, 1996). Thus, these two higher-order value types can be used to identify systematic value differences between cultural groups.

In the study, only items that proved to have similar meanings across cultures were included and used for computing standard indexes for higher-order value types (Schwartz, 1996). Hence, eight items were used to measure Openness to Change (e.g., choosing own goals, varied life), and 14 items to assess Conservation (e.g., honoring parents and elders, obedient). The importance of each item as a guiding principle in life was rated on a Likert scale ranging from -1 (opposed to my values) to 7 (of supreme importance).

Data on higher-order value types is available from 803 participants (four Chinese and six Costa Rican participants did not provide sufficient information on guiding principles). As with the NEO-FFI, we refrained from a detailed examination of measurement equivalence across cultural groups due to convincing evidence on the equivalence of these value measurements across cultural groups (e.g., Schwartz, 1992). For the cultural samples at hand, Cronbach alphas ranged from .60 (Openness to Change in the Cameroonian sample) to .83.
There were no negative item-whole correlations for any of the two scales in any of the four cultural groups. Thus, internal consistencies indicate that these sets of value items can be treated as measuring single latent variables across the cultural samples under investigation.

**Sociosexuality.** The personality dimension of sociosexuality was measured with the Sociosexual Orientation Inventory (SOI; Simpson & Gangestad, 1991). The SOI is a self-report questionnaire that includes measures of sexual behavior (e.g., With how many different partners have you had sexual intercourse this past year?), fantasies (How often do you fantasize about having sex with someone other than your current partner?), and attitudes (e.g., Sex without love is OK). The items tapping attitudes were evaluated on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Responses to the fantasy item were made on a Likert scale ranging from never (1) to at least once a day (8). Finally, participants provided their own estimate when answering the behavioral items. The seven items from these three types of measure were combined to an overall index, with higher scores indicating a more unrestricted sociosexual orientation that is, however, not to be equated with promiscuity (Simpson & Gangestad, 1991; Simpson, Wilson, & Winterheld, 2004).

The SOI is widely applied in research, and its reliability and validity have been confirmed in more than 40 cultural groups (Schmitt, 2005; Simpson et al., 2004). Nevertheless, the factor composition of the SOI-items was examined for each of the cultural groups, since the Chinese version of the questionnaire was developed for the study at hand. Exploratory factor analyses (principle component analysis) indicated that all seven items show significant factor loadings on a single factor when considering data from each of Cameroon, Costa Rica, and Germany (factor loadings > .48). However, one behavioral item (With how many different partners have you had sex on one and only one occasion?) and one attitudinal item (I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her – reversed scored) showed no
pronounced factor loading (< .10) when examining the Chinese data. Thus, both items were excluded in all samples from further analyses. Rerunning factor analyses using the five remaining items showed that all factor loadings were sufficiently high (> .52; percentage of explained variance ranged from 41% to 55%). Cronbach alphas for the shortened, 5-item SOI ranged from .60 (China) to .78 (Costa Rica).

Results

In the following, assumptions on prevailing cultural models in the present samples will be tested by examining mean differences in value orientations. Next, effects of socio-demographic characteristics on measurements of $n$ Power, responsibility, and sociosexuality will be reported. Finally, findings on the relationship between sociosexuality, $n$ Power, and responsibility will be presented separately for men and women. Effects for personality traits will be considered in those analyses. Descriptive data on measures are presented in Table 1.

Cultural Differences in Value Orientations

A multivariate analysis of variance (MANOVA) with higher-order value types as dependent variables and cultural group as predictor was conducted to test for differences in value orientations between cultural samples. Multivariate statistics indicated variability across cultural groups ($F_{6, 1596} = 65.87 /$ Wilks’s criterion; $p < .001; \eta^2 = .20$). Cultural group had a significant effect on Openness to Change ($F_{3, 799} = 48.75; p < .001; \eta^2 = .16$) and Conservation ($F_{3, 799} = 55.63; p < .001; \eta^2 = .17$). Post hoc tests (Bonferroni) showed that Costa Rican and German participants scored significantly higher for Openness to Change than did participants from Cameroon and China ($ps < .001$). Additionally, Chinese participants reported higher levels of Openness to Change than did participants from Cameroon ($p < .05$). Furthermore, German participants scored lowest on Conservation ($ps <$
Finally, Costa Rican participants showed higher levels of Conservation than did respondents from Cameroon ($p < .01$) and China ($p < .001$). To conclude, findings on value orientations indicate variation across important dimensions of value orientation, and substantiate the assumptions guiding the selection of cultural groups for the study at hand.

Effects of Culture and Socio-demographic Variables on Power, Responsibility, and Sociosexuality

To test for level-oriented cultural and gender-related differences, three univariate analyses of covariance (ANCOVA) were conducted with Power, responsibility, and sociosexuality as dependent variables. Culture and gender were included as factors, and age, level of education, number of children, birth rank (having younger siblings or not), and relationship status (having a partner or not) as covariates. In supplementary analyses, some of the covariates were used as factors (e.g., birth rank in analyses on responsibility). However, none of the analyses pointed to any pronounced main and interaction effect ($\eta^2$ $\leq$ .01).

For Power, analyses revealed a pronounced effect of culture ($F_{3, 788} = 12.63; p < .001; \eta^2 = .05$): tests of main effects with a Bonferroni adjustment showed that participants from China scored higher for Power than participants from Cameroon ($p < .001$), Costa Rica ($p < .001$), and Germany ($p < .05$); German participants scored higher for Power than participants from Costa Rica ($p < .05$). Neither gender, the interaction of culture and gender, nor any of the covariates showed a significant effect on Power ($\eta^2$ $\leq$ .01).

None of the covariates nor gender had a significant effect on responsibility ($\eta^2$ $< .01$). Yet, a weak but significant effect of culture could be verified ($F_{3, 788} = 3.53; p < .05; \eta^2 = .01$). Post-hoc tests indicated that participants from Costa Rica scored lower in responsibility than did participants from China and Cameroon ($ps < .05$). The main effect of culture was, however, qualified by a significant culture by gender interaction ($F_{3, 788} = 8.23; p < .01; \eta^2 = .02$) - male Costa Rican participants scored lower in responsibility than did Chinese females.
(p < .05) and Cameroonian males (p < .01) who, in turn, scored higher than Cameroonian females (p < .05).

Finally, effects of culture ($F_{3, 788} = 35.80; p < .001; \eta^2 = .11$) and gender ($F_{1, 788} = 55.72; p < .001; \eta^2 = .07$) were found in analyses of sociosexuality: German participants showed higher levels of sociosexuality than did respondents from Cameroon, China, and Costa Rica ($ps < .001$); Costa Rican participants showed higher levels of sociosexuality than did Chinese participants ($p < .01$). Women showed significantly lower levels of sociosexuality than men in each of the cultural groups under investigation, but the size of this difference was not qualified by culture, i.e., there was no significant culture by gender interaction. Among the covariates, only age was significantly associated with sociosexuality ($F_{1, 788} = 4.36; p < .05; \eta^2 = .01$): the older participants were, the lower their levels of sociosexuality.

**The Association of Power and Responsibility with Sociosexuality**

To test relationships between Power, responsibility, and sociosexuality, hierarchical regression analyses (simultaneous entry method) were conducted. To control for age- and trait-related effects, sociosexuality was regressed on participants’ age and five personality traits in the first block of the regression analyses (Block 1). Moreover, to test whether the relationship between sociosexuality, Power, and responsibility was affected by participants’ gender, gender (coded 0 for female and 1 for male participants) was entered as additional predictor in Block 1. In the next block, Power and responsibility were entered as predictors into the regression (Block 2). The interaction coefficient (product term: Power X responsibility) was entered into the model in step 3 (Block 3 which is depicted in Table 2). Furthermore, interactions between gender and Power, responsibility, Power X responsibility were included as additional predictor variables in Block 4. Predictor variables were z-standardized within cultural samples to examine gender-related effects.

To briefly outline the main findings, all four models reached significance ($p < .001$), with $Fs$ ranging from 16.31 ($df = 7, 801$) to 10.47 ($df = 13, 795$). Most importantly, the final model
testing the moderating effect of gender ($F_{13,795} = 10.47; p < .001; R^2 = .15$) significantly increased the percentage of explained variance ($F_{change\,3,795} = 3.09; R^2_{change} = .01; p < .05$). Specifically, the relationship between sociosexuality and $n$ Power X responsibility was significantly conditioned by gender ($\beta = -.15; p < .01$).

Based on those findings supporting the assumptions of the study, gender and all interactions including gender were dropped as predictor variables, and regression analyses were rerun separately for male and female participants. As analyses focused on structure-oriented findings, sociosexuality, $n$ Power, and responsibility were z-standardized within cultural samples separately for male and female participants. The interaction term (step 3) was calculated with standardized variables (Cohen, Cohen, West, & Aiken, 2003). Effect sizes of interactions are reported in terms of $f^2$ in which values of .02, .15, and .35 reflect small, medium, and large effects, respectively.

As none of the betas substantially changed when adding additional predictors in Block 2 and 3, statistics of the final block are presented in Table 2. Considering analyses of male sociosexuality, higher levels of agreeableness and conscientiousness were significantly associated with lower levels of sociosexuality ($F_{6,357} = 3.95; p < .001; Block\,1$). Thereafter, higher levels of $n$ Power added significantly to the prediction of sociosexuality ($F_{8,355} = 3.60; p < .001; F_{change\,2,355} = 2.43; R^2_{change} = .02; p < .10; Block\,2$). Finally, additional variance in sociosexuality was predicted by including the interaction coefficient between $n$ Power and responsibility ($F_{9,354} = 3.73; p < .001; F_{change\,1,354} = 4.48; R^2_{change} = .01; p < .05; Block\,3$).

As recommended by O’Connor (1998; e.g., partialling out additional covariates, such as age and personality traits), the significant interaction ($f^2 = .02$) was examined by computing scores on sociosexuality for predictor values ($nPower$ and responsibility) of one standard
deviation below the mean, near the mean, and one standard deviation above the mean. Slopes corresponding to a low level of responsibility ($\beta = .22; t(360) = 3.07; p < .01$) and a medium level of responsibility ($\beta = .12; t(360) = 2.13; p < .05$) differed significantly from zero.

Hence, a positive relationship between strength of $n$ Power and sociosexuality was only found for male participants characterized by low and medium levels of responsibility. In contrast, high levels of responsibility seem to have a taming effect on $n$ Power for males, as implicit power motivation was unrelated to sociosexuality among those participants (see Figure 1).

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Analyses of female sociosexuality indicated that lower levels of neuroticism, agreeableness, and conscientiousness were significantly related to higher levels of sociosexuality ($F_{6, 442} = 6.54; p < .001; \text{Block 1}$). Furthermore, a main effect of responsibility on sociosexuality was verified: the lower women scored on responsibility, the higher their level of sociosexuality ($F_{8, 440} = 6.03; p < .001; F_{\text{change 2, 440}} = 4.22; R^2_{\text{change}} = .02; p < .05; \text{Block 2}$). Neither $n$ Power nor the interaction terms included in the final model ($F_{9, 439} = 5.38; p < .001; F_{\text{change 1, 439}} = .31; \text{ns}; \text{Block 3}$) explained a significant share of variance in sociosexuality.

We then tested whether the effects of $n$ Power, responsibility, and their interaction on male and female sociosexuality were equivalent across the cultural groups under investigation. There are, in principle, two different ways to examine this crucial step in our analyses: firstly, dummy variables for cultural groups as well as interactions of those dummy variables and predictors could be entered to test whether the single regression equation captures the relationship between predictors and the dependent variable in each group under investigation (see Van de Vijver & Leung, 1997). However, this approach quickly becomes
unwieldy and can easily result in chance increment of explained variance when a multiple number of effects is tested (e.g., several interactions of dummy variables and predictors; see also Jaccard & Wan, 1995, on issues related to measurement error).

Thus, we implemented the second approach, i.e., multi-group, structural equation modeling (SEM) that has become an increasingly favored method in multivariate analysis in social and behavioral sciences when, for example, the strength of associations among measurements is examined in various (cultural) groups. Parsimony, ease of interpretation, and accessibility of both fit indices to evaluate the viability of the hypothesized model and estimates for single groups are the main advantages of using SEM in such cases.

We conducted multigroup path analyses with manifest variables to test equality of regression coefficients across cultural groups by applying SEM with maximum likelihood estimation (AMOS). Models were defined separately for men and women. In the hypothesized model, \( n \) Power, responsibility, and the interaction term of \( n \) Power with responsibility were treated as exogenous variables, whereas sociosexuality was treated as endogenous variable with age and traits being partialled out.

After equality constraints on regression coefficients for \( n \) Power, responsibility, and their interaction were placed across groups (intercepts were left free to vary), the constrained models for male and female participants gained nine degrees of freedom (40 data points minus 31 parameters to be estimated). Multi-group analyses indicated that the specified structural weights model (all paths set as equal across cultural groups) approximated the data sufficiently well. Fit indices and unstandardized and standardized regression coefficients are given in Table 3.

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Insert Table 3 about here

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Furthermore, nested model comparisons (unconstrained model – structural weight model) showed that the implementation of model constraints did not lead to a significant increment in the $\chi^2$ statistic. The structural weights models did not fit worse than the unconstrained models, $\Delta \chi^2 (9) = 16.14, p = .06$ for the male samples nor $\Delta \chi^2 (9) = 10.74, p = .29$ for the female samples. Based on these results as well as the good fit indices of the models, we can conclude that the findings derived from regression analyses hold true regardless of participants’ cultural background.³

Discussion

The present study aimed at shedding light on the relationship for adult male and female participants between individuals’ need for power, their responsibility, and their tendency to engage in uncommitted sexual activity. Before this study, the generalizability of findings on the behavioral realization of $n$ Power was questionable, as data had primarily been assessed from individuals who were raised in Euro-American cultural contexts. To address this prevalent shortcoming in the behavioral sciences, participants of the present study were recruited from widely varying cultural contexts. In the following, the main issue of the paper, i.e., the structural relationship between sociosexuality, $n$ Power, and responsibility will be first discussed. Next, we will briefly consider culture- and gender-related differences in levels of psychological constructs, as well as effects of personal characteristics on these measurements. Finally, we will refer to limitations of the present study and future directions for research on implicit motives.

**Personality Dispositions and Level of Male and Female Sociosexuality across Cultural Groups**

In line with previous findings, male and female participants did not differ in their strength of $n$ Power (see Winter, 1988). Thus, while similar in their concern for power, the relationship between $n$ Power and sociosexuality was, as hypothesized, conditioned by gender, such that, independent of cultural group, level of unrestricted sexuality and implicit
power motive were positively correlated among men, but unrelated among women. This finding clearly corroborates the link between high scores in implicit power and various sex-related behavioral tendencies among men (e.g., Winter, 1988; Yost & Zurbriggen, 2006) that may also be considered when reasoning why a high level of $n$ Power in men seems often to be detrimental to intimate, romantic relationships (Mason & Blankenship, 1987; Winter, Stewart, & McClelland, 1977; Zurbriggen, 2000).

An ultimate (evolutionary) explanation for the link between the evolved disposition for having impact on and dominating others ($n$ Power) and a greater desire for casual sex among men but not among women may be an expression of distinct mating strategies, which in turn reflect gender-specific, parental investment in offspring (Buss, 1989; Trivers, 1972). Short-term mating strategies potentially increase reproductive success of men who generally have lower investment in their offspring than do women.

As men’s access to potential mates depends on their position in the male dominance hierarchy (because dominance plays a decisive role in the obtainment of high status and thus resources which can be invested in mates and offspring; Mueller & Mazur, 1997), a link between concern for power and sociosexuality is to be expected. In contrast, short-term mating has little or no reproductive benefits for women, and thus, females may have developed less desire for casual sex (see, however, Greiling & Buss, 2000, for potential benefits of short-term mating for women). Furthermore, reproductive success of females does not depend on their striving for power, i.e., their position in the status hierarchy, as they are assumed to represent the “choosy” sex. Our finding that women report lower levels of sociosexuality than men is in line with such an argument, but may also point to the influence of sociocultural behavioral norms that are discussed in the following.

From a proximate perspective, it may be argued that the process of behaviorally implementing implicit motives is conditioned by additional facets of personality and social situations, defined in terms of their normative constitution (Hofer & Bond, 2008). For
example, gender-related socialization practices associated with role obligations and norms for desirable and objectionable behavior intervene between the need for power and its expression in behavior (e.g., Hirschowitz, 1987). Thus, situational constraints that have their locus outside the individual represent a major source of behavioral determinants (Pepitone, 1976) establishing particular instrumental means by which a motive is realized: implicit social motives in adults represent, even if they are probably an evolved aspect of humans’ biological heritage, a complex learned pattern of eliciting stimuli and behaviors (Hofer & Bond, 2008).

Winter (1988) explains the missing link between Power and profligate behavior among women as a result of childhood experiences: women are inclined to express their power motive in socially appropriate ways, because as children they experience more responsibility socialization than boys. Typically, girls are more involved in responsibility training in the area of household chores (e.g., food preparation and caretaking of siblings) that contribute to family welfare (see also Whiting & Whiting, 1975, for the effect of early childhood experiences on egoistic and responsible behavior across cultural groups). Thus, rather than gender per se, socialization for eventual parenthood seems to channel behavioral correlates of basic human needs.

There is evidence that two developmental contexts present a proxy for responsibility training: the presence of younger siblings in childhood and having children in later life are associated with a socialized realization of Power among men and women; probably, inhibiting hurtful impulses and subordinating one’s own needs to those of another individual characterize both contexts (Winter, 1988; Winter & Barenbaum, 1985).

In line with previous findings (Winter & Barenbaum, 1985), we found no gender-related differences in responsibility. By contrast, however, to existing correlates of responsibility, birth rank and having children, did not affect responsibility, which in turn is hypothesized to channel behavioral realizations of Power. Winter (1992) states that an individual’s
disposition for responsibility can be shaped by significant learning experiences throughout the life span. Thus, besides sibling position and reproductive status, other significant developmental contexts that set demands for prosocial acting (e.g., school, job) and equally allow individuals to achieve a pronounced tendency to nurture responsibly might be examined in future research.

Corresponding to our predictions, a high level of responsibility was related to lower levels of sociosexuality among women. Furthermore, the relationship between Power and sociosexuality was qualified by the level of responsibility among men: higher levels of an unrestricted sociosexual orientation were associated with a more pronounced need for power only among men who were not characterized by a strong disposition for responsibility. Thus, power seems to be tamed in those men with a strong tendency to act in a responsible way (Winter, 2006).

To date, this association of Power and profligate behavior among men and women has only been demonstrated for samples from Euro-American cultural contexts. Thus, the study at hand is the first to examine the conjoint influence of individuals’ need for power and responsibility on sociosexuality, considered to be one facet in the cluster constituting profligate, impulsive behaviors. In sum, the equivalence of associations between psychological and behavioral concepts across cultural groups under investigation significantly increases the generalizability of findings on correlates of Power: even across cultural groups with pronounced differences in their value orientation, the unconsciously represented power motive directs men but not women towards enhanced sociosexuality. Furthermore, results also demonstrate that this tendency can be reduced by other aspects of personality, such as responsibility, which to date are underrepresented in research on the implicit power motive.

Moreover, the present study demonstrates that the implicit motive power and responsibility have incremental validity in predicting sociosexuality over and above...
personality traits which previous research has shown to be significantly associated with individuals’ willingness to engage in uncommitted sexual relations (e.g., Schmitt & Shackelford, 2008). In particular, low levels of both agreeableness and conscientiousness, which have been linked to impulsive sensation-seeking (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1994), predict engagement in uncommitted sexual relationships (e.g., Barta & Kiene, 2005; Schmitt & Shackelford, 2008). Consistent with such findings, analyses of the present data show that higher scores for male and female sociosexuality significantly related to lower levels of both agreeableness and conscientiousness: weak tendencies to seek harmonious relationships (agreeableness) and to resist temptations, provided, for example, by seeking out various, alternative partners, (conscientiousness) predict individuals’ having casual sex.

Higher scores on sociosexuality were also significantly related to lower levels of neuroticism, but only among women. Like conscientiousness, neuroticism has been associated with behavioral prudence (Schaller & Murray, 2008). Furthermore, neuroticism has been linked to an avoidance orientation characterized by withdrawal in order to prevent threats and punishments (e.g., Carver, Sutton, & Scheier, 2000; Kuhl, 2001). Given that profligate sexual behavior may be more compatible with the traditional male but not female sex role, unrestricted sexuality may put women at risk for pregnancy, social isolation, and exploitation (Winter, 1988). Thus, particularly women who have a strong tendency to avoid threats and punishments may be less willing to engage in uncommitted sexual relationships.

An alternative explanation may be indicated by the close association between high levels of neuroticism and low capabilities for self-regulation (i.e., self-motivation and self-relaxation; Kuhl, 2001). Thus, women who more strongly depend on external sources of action control, e.g., on close emotional contexts (partners) that allow them to feel accepted and secure, refrain from sexual activity with partners outside of a romantic relationship. Such a link between sociosexuality and the need for close interpersonal relationships is also
indicated by the pronounced negative association between sexual behavior and need for affiliation in women (Schultheiss et al., 2003). Generally, however, associations between neuroticism and various indicators of sexual behavior are much less pervasive (Schmitt & Shackelford, 2008). Particularly when considering heterogeneous associations among men, further research across gender and cultural groups seems indispensable. Significant associations with sociosexuality were neither found for extraversion nor for openness to experience.

**Cultural Differences in the Strength of Variables**

Analyses of guiding principles in life revealed that cultural samples differed in value patterns as expected. For example, German participants showed a value pattern of high scores on Openness to Change and low scores for Conservation, characteristic of individualistic cultures where children grow up in a cultural context that emphasizes individual distinctiveness and self-reliance. Furthermore, non-Western cultural groups assigned higher importance to values that reflect a concern for interpersonal harmony and relatedness. Interestingly, non-Western cultural groups differ meaningfully from one another in their evaluation of Openness to Change, with lowest scores among Cameroonian participants: the significance of values representing a concern for personal stimulation and self-direction in life mirrors divergent socioeconomic conditions in Cameroon, China, and Costa Rica. In non-Western contexts characterized by greater affluence and level of education, children’s self-reliance is increasingly tolerated as family survival does not depend on the economic contribution of offspring (Kağıtçibaşı, 2005).

Further analyses indicate that Power, responsibility, and sociosexuality represent relatively stable constructs: sociodemographic characteristics of the individual (e.g., level of education) had little or no effect on these constructs. Only a slight age-related effect on sociosexuality was found. The finding that older participants reported lower levels of sociosexuality might indicate that mating primarily represents a key issue in early adulthood.
Cultural differences in level of sociosexuality were in the expected direction: German participants showed a greater level of unrestricted sociosexuality than did participants from non-Western cultural contexts. Additionally, Costa Rican adults showed a less restricted sociosexual orientation than did Chinese adults. This pattern of cultural differences exactly corresponds to the cultural differences in values that emphasize personal stimulation and holding one’s own independent thought and self-directed activities in life. German and, to a lesser extent, Costa Rican participants show higher levels of sociosexuality. In contrast, participants from China and Cameroon, who show an emphasis on respect for tradition and interpersonal harmony and value self-direction and stimulation much less, showed lower levels of sociosexuality. These findings indicate that cultural ideologies, as reflected in major guiding principles in life, represent a significant determinant of human functioning. In some cases, such cultural ideologies might even act as a source of motivation, potentially at odds with innate motive dispositions, but in conformity with externally imposed social controls (MacDonald, 1991; for a detailed discussion of cultural differences in sociosexuality based on various theoretical approaches see Schmitt, 2005).

The cultural differences in Power and responsibility are more difficult to discuss, as both concepts have rarely been employed in cross-cultural research. While the relatively high need for power among German adults, when compared to participants from Cameroon and Costa Rica, corresponds to other, recent findings (Hofer, Chasiotis, & Campos, 2006), the high need for power among Chinese adults is consistent with much previous cross-cultural work on values indicating the high Chinese endorsement of power (Bond, 1996). Cross-cultural research on early socialization experiences that shape the development of Power is urgently needed to enhance our understanding of human motivation. Similarly, we refrain from an interpretation of cultural differences in responsibility. Future research may help to disclose crucial developmental contexts for responsibility that help to adequately explain differences related to participants’ gender and culture of origin.
Outlook

Results of the present study show that, independent of cultural group, individuals’ tendency to engage in sex with multiple partners and without strong emotional bonds relates to significant aspects of personality, either cognitively or implicitly represented. While this study sheds an important light on the determinants of human behavior in various cultural contexts, some limitations of the study have to be acknowledged. In analyses, a reduced score for sociosexuality has been employed due to differential item functioning (bias) of two items from the SOI. Nonetheless, the reduced score was highly correlated with the original full score.

Further improvements that ought to be taken into account in future cross-cultural research on this issue are the examination of different types of both profligate and socially appropriate behavior that are assumed to be associated with the need for power. Additionally, other facets of personality that have shown to channel the behavioral realization of need for power in samples from Western contexts might be tested in a cross-cultural design, e.g., activity inhibition.

To conclude, the present paper presents evidence that significant facets of personality meaningfully predict individuals’ tendency to engage in casual sex across highly divergent cultural groups. Over and above consciously represented traits, components of personality that bypass conscious awareness, i.e., individuals’ implicit need for power, as well as their disposition towards responsibility, significantly predicted variability in sociosexuality, regardless the cultural background of participants.

Among women, the disposition towards responsibility, reflected, for example, in being concerned about interpersonal harmony, other people’s welfare, and about negative consequences of one’s own behavior, was associated with lower scores for sociosexuality. The same psychological construct channeled the realization of the need for power among male participants. However, among men characterized by moderate levels of responsibility, a high need for power was related to more engagement in casual sex.
The study thus exemplifies the benefits of multivariate research. Particularly, the inclusion of implicit measurements of personality adds to our understanding of psychological and behavioral processes. Preferably, such a multivariate procedure will be allied to a multicultural approach, permitting meaningful insights about universal and culture-bound aspects of human behavior and enabling us to develop theories about if and how culture moderates the impact of basic human processes (Bond, 2009).
References


Author note

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Footnotes

1 Even if values of ICC indicate a high level of agreement between coders from different research regions, we further examined whether cultural mean differences in need for power and responsibility reflect, to some extent, differential coding sensibility in the four groups. Thus, 20, bias-free sets of picture stories from Costa Rica and China were randomly selected and translated by bilingual research assistants into German (Costa Rica) and English (China). Subsequently, each of the cultural subsets was coded by a different German assistant. Assistants were unaware of the reason for reexamining the data. Analyses also included data of 20 Costa Rican and 15 Chinese sets scored by a German assistant and the first author, respectively, for testing intercultural reliability. The means of \( n \) Power and responsibility that were recalculated for Costa Rican (\( n = 40 \)) and Chinese (\( n = 35 \)) subsets were in line with the means of the total cultural samples (see Table 1). For the Costa Rican subsample means were \(-.46\) for \( n \) Power (\( SD = 1.17 \); total sample: \( M = -.40 \); \( SD = 1.45 \)) and \(-.26\) for responsibility (\( SD = .67 \); total sample: \( M = -.25 \); \( SD = 1.00 \)). For the Chinese subsample means were \(.57\) for \( n \) Power (\( SD = 1.43 \); total sample: \( M = .58 \); \( SD = 1.74 \)) and \(.49\) for responsibility (\( SD = 1.40 \); total sample: \( M = .13 \); \( SD = 1.32 \)). Thus, only the means for responsibility deviated somewhat between the Chinese samples under consideration. We suggest that the randomly translated picture story sets incidentally produced higher mean scores for responsibility, i.e., reflecting participants’ true scores. Reported significant differences between cultural samples in responsibility are, however, not negatively affected in the rather unlikely case that the result may be caused by differential sensibility for coding categories between the Chinese and the German assistant, as the Chinese assistant would have underestimated Chinese participants’ level of responsibility.

2 According to Simpson and Gangestad (1991) the weighted scale score is computed as follows: \( (5 \times \text{number of partners in past year}) + \text{number of future partners} + (5 \times \text{number of one night stands}) + (4 \times \text{frequency of fantasy}) + (2 \times \text{sum of the three attitudinal items}) \). As
two items were excluded in the present study, the following formula was used: \((5 \times \text{number of partners in past year}) + \text{number of future partners} + (4 \times \text{frequency of fantasy}) + (2 \times \text{sum of two attitudinal items})\). There was no need to cap the behavioral item about future sex partners at 30 as none of the participants estimated a number greater than 20. The correlation between the reduced SOI score and the full score was .75 \((p < .001)\).

3 A number of additional analyses were conducted to examine the validity of our findings with respect to predictors of sociosexuality across cultural groups. Firstly, regression analyses were rerun with three dummy variables for cultural group and their interaction terms with predictors in an additional final block. Neither when using sociosexuality (male subsample: \(F_{\text{change}} 30, 324 < 1.40\); female subsample: \(F_{\text{change}} 30, 409 < 1.15\)) nor when using sociosexuality controlled for age- and trait-related effects to reduce the number of predictors (male subsample: \(F_{\text{change}} 12, 348 < 1.75\); female subsample: \(F_{\text{change}} 12, 433 < 1.13\)) did the inclusion of this extra block of predictors result in a significant increase in explained variance.

In regression analyses we could show that implicit measurements explain variance over and above that explained by personality traits. Yet, we also calculated regression models without including traits into regression models and reran the analyses. Briefly, findings derived from those analyses did not differ from the ones reported in text: analyses substantiated a gender-related but culture-independent relationship between sociosexuality, \(n\) Power, and responsibility.

Even if not central to the present study, it was finally tested whether traits significantly related to sociosexuality of men (agreeableness and conscientiousness) and women (agreeableness, conscientiousness, and neuroticism) were invariantly associated with sociosexuality across groups. Thus, multigroup path analyses were rerun with \(n\) Power, responsibility, \(n\) Power X responsibility, participants’ age, and the five personality traits as exogenous variables and sociosexuality as an endogenous variable. For the female subsample, the unconstrained model adequately fits the data \(\chi^2 = 114.92; df = 92; p = .05;\)
AGFI = .89; RMSEA = .02). Furthermore, implementation of equality constraints on regression coefficients did not lead to a significant increment in the $\chi^2$ statistic ($\Delta \chi^2 (27) = 34.49; p = .15; AGFI = .89; RMSEA = .02$). Responsibility, neuroticism, conscientiousness, and agreeableness were equally related to female sociosexuality regardless of cultural group (C.R.s ranging from -2.25 to -4.15; ps ≤ .02). Regression coefficients of the remaining variables did not reach significance. Testing an identical model for the male sample indicated that the unconstrained model approximated the data sufficiently well ($\chi^2 = 130.88; df = 92; p = .01; AGFI = .85; RMSEA = .03$), although the structural weight model was associated with an impairment of fit ($\Delta \chi^2 (27) = 44.94; p = .02$). Modification indices suggested loosening the equality constraints that were put on the path from neuroticism to sociosexuality for the Costa Rican and Cameroonian sample. The modified model did not fit worse than the unconstrained model ($\Delta \chi^2 (25) = 35.03; p = .09; AGFI = .85; RMSEA = .03$). SEM indicated that $n$ Power, the interaction of $n$ Power and responsibility, conscientiousness, and agreeableness were significantly associated with male sociosexuality across cultural groups (C.R.s ranging from -3.85 to 2.07; ps ≤ .05). Regression coefficients of responsibility, age, extraversion, openness to experience, and neuroticism (German and Chinese subsamples only) were not significant. Yet, neuroticism was negatively related to sociosexuality among Costa Rican men (C.R. = -2.01; p = .04) but positively related to sociosexuality among Cameroonian men (C.R. = 2.41; p = .02).
Table 1

Descriptive Statistics of \( n \) Power, Responsibility, Sociosexuality, Value Orientations, and Personality Traits

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Cameroon M (SD)</th>
<th>China M (SD)</th>
<th>Costa Rica M (SD)</th>
<th>Germany M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 n Power</td>
<td>-.22(^a) .160</td>
<td>.58(^a) 1.74</td>
<td>-.40(^c) 1.45</td>
<td>.07(^b) 1.58</td>
</tr>
<tr>
<td>2 Responsibility</td>
<td>.08(^a) 1.35</td>
<td>.13(^a) 1.32</td>
<td>-.25(^b) 1.00</td>
<td>-.05(^a) .12</td>
</tr>
<tr>
<td>3 Sociosexuality</td>
<td>20.71(^b) 11.74</td>
<td>18.66(^c) 8.76</td>
<td>23.89(^b) 13.91</td>
<td>29.99(^a) 15.52</td>
</tr>
</tbody>
</table>

Value Orientations (selection of cultural groups)

| 4 Openness to Change | 3.28\(^c\) 1.02 | 3.57\(^b\) 1.13 | 4.35\(^a\) 1.17   | 4.27\(^a\) 1.13 |
| 5 Conservation       | 4.51\(^b\) .77  | 4.30\(^b\) .94  | 4.87\(^a\) 1.09   | 3.64\(^c\) 1.10 |

Personality Traits\(^1\) (control variables in structure-oriented analyses)

| 6 Neuroticism         | 2.81\(^a\) .50  | 2.77\(^a\) .60  | 2.59\(^b\) .65    | 2.91\(^a\) 64    |
| 7 Extraversion        | 3.53\(^a\) .39  | 3.17\(^b\) .51  | 3.54\(^a\) .59    | 3.29\(^b\) .59   |
| 8 Openness to experience | 3.05\(^c\) .36 | 3.20\(^b\) .37  | 3.24\(^b\) .61    | 3.53\(^b\) .52   |
| 9 Agreeableness       | 3.33\(^c\) .36  | 3.46\(^b\) .38  | 3.70\(^a\) .59    | 3.56\(^b\) .44   |
| 10 Conscientiousness  | 3.83\(^b\) .45  | 3.67\(^c\) .43  | 4.01\(^a\) .54    | 3.71\(^c\) .58   |

Note 1: It is beyond the scope of the present study to analyze and thoroughly interpret cultural differences in traits. However, descriptives of traits are added for interested readers (see subscripts for mean differences across cultural groups based on ANOVAs with the factor cultural group).

\(^a\), \(^b\), \(^c\) = Different subscripts indicate statistically significant differences. See text for details.
Table 2

**Sociosexuality in Men and Women: Influence of Age, Personality Traits, n Power, and Responsibility**

<table>
<thead>
<tr>
<th>Predictor Variables in the final Block</th>
<th>Male Participants</th>
<th>Female Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$F$-value $(R^2)$</td>
</tr>
<tr>
<td>Age</td>
<td>-.08</td>
<td>3.73***</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.04</td>
<td>(.09)</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.18**</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-.11*</td>
<td></td>
</tr>
<tr>
<td>n Power</td>
<td>.12*</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>n Power * Responsibility</td>
<td>-.12*</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Only results for Block 3 are given in the table. Please refer to the text for results for Blocks 1 and 2.*

*p < .05; ** p < .01; *** p < .001;*
Table 3

Influences of Power and Responsibility on Male and Female Sociosexuality

| Sociosexuality | Male Participants | | | | | Male Participants | | | | Female Participants | | | |
|----------------|-------------------|---|---|---|---|-------------------|---|---|---|---|-------------------|---|---|---|---|
|                | B (S.E.)          | β  | β  | β  | β  |                  | β  | β  | β  | β  |                  | β  | β  | β  | β  |
|                | Cameroon          | China | Costa Rica | Germany | Cameroon          | China | Costa Rica | Germany | Cameroon          | China | Costa Rica | Germany | Cameroon          | China | Costa Rica | Germany |
| n Power        | .120* (.055)      | .126 | .124 | .135 | .125 | - .022 (.058)     | - .023 | - .022 | - .024 | - .022 | -.090* (.040)     | - .128 | - .133 | - .143 | - .093 |
| Responsibility |                   |      |      |      |      |                  |      |      |      |      |                   |      |      |      |      |
| n Power x Responsibility | -.090* (.040) | - .128 | - .133 | - .143 | - .093 |                   |      |      |      |      |                   |      |      |      |      |
|                | .070 (.047)       | .073 | .073 | .085 | .072 | -.134** (.048)    | -.141 | -.141 | -.164 | -.139 |                   |      |      |      |      |
|                |                   |      |      |      |      |                  |      |      |      |      |                   |      |      |      |      |
|                |                   |      |      |      |      |                  |      |      |      |      |                   |      |      |      |      |

* p < .05; ** p < .01;

Note. Fit indices of the structural weights models were $\chi^2 / df = 1.82; AGFI = .90; CFI = .96; RMSEA = .05; AIC = 78.40$ (saturated model = 80) for the male samples and $\chi^2 / df = 1.19; AGFI = .95; CFI = .99; RMSEA = .02; AIC = 72.74$ (saturated model = 80) for the female samples.
Figure caption

*Figure 1.* Taming power by sense of responsibility in men.
Figure 1