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Big Five Traits Related to Short-Term Mating:

From Personality to Promiscuity across 46 Nations

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Abstract

As part of the International Sexuality Description Project, 13,243 participants from 46 nations responded to self-report measures of personality and mating behavior. Several traits showed consistent links with short-term mating. Extraversion positively correlated with interest in short-term mating, unrestricted sociosexuality, having engaged in short-term mate poaching attempts, having succumbed to short-term poaching attempts of others, and lacking relationship exclusivity. Low levels of agreeableness and conscientiousness also related to short-term mating, especially with extra-pair mating. Neuroticism and openness were associated with short-term mating as well, but these links were less consistent across sex and nation. Nation-level links between personality and sexuality replicated within-region findings, such as the strong association between national extraversion and national sociosexuality. Discussion focuses on the origins of personality-sexuality links and their implications across nations.

*Key words:* Big Five; personality; cross-cultural psychology; evolutionary psychology; short-term mating; sexual behavior

Big Five Traits Related to Short-Term Mating:

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Short-term mating is likely to have been a recurrent feature of human evolutionary history, occasionally generating substantial reproductive benefits for ancestral members of both sexes (Kelly & Dunbar, 2001; Little, Cohen, Jones, & Belsky, 2007; Little, Jones, Penton-Voak, Burt, & Perrett, 2002; Scheib, 2001; Schmitt, 2005a; and see for review, Smith, 1984, and Buss, 2003). But there are reproductively-relevant costs to short-term mating as well, for ancestral humans as assuredly as for modern humans. For example, short-term mating behaviors—including variants such as promiscuity, infidelity, and the poaching of other people's long-term partners—represent significant health concerns to individuals, relationships, and societies throughout the world. Short-term mating can lead to relationship dissolution (Bringle & Buunk, 1991; Gottman, 1994), sexual jealousy and violent retribution by aggrieved partners (Buss, 2000; Malamuth, 1998), and the contraction of sexually-transmitted diseases and infections (Mashegoane, Moalusi, Ngoepe, & Peltzer, 2002; Pinkerton & Abramson, 1996). In sub-Saharan Africa alone, 23 million adults are currently infected with HIV, with most cases traceable to instances of short-term mating (Shelton et al., 2004).

An important task for personality psychologists is to identify those individual differences most closely associated with short-term mating. Doing so would give scientists a better framework for understanding the etiology of permissive sexual attitudes and risky sexual practices (Trobst, Herbst, Masters, & Costa, 2002). Previous research suggests some of the traits from the Big Five model of personality (Digman, 1990; Goldberg, 1990) are associated with short-term mating (Hoyle, Fejfar, & Miller, 2000; Schenk & Pfrang, 1986; Shafer, 2001; Wright, 1999; Wright & Reise, 1997). In this article, the links among all five dimensions of the Big Five and multiple

measures of short-term mating were examined across 46 nations representing 10 major regions of the world.

### *Personality Traits and Short-Term Mating*

Perhaps the strongest personality predictor of short-term mating is impulsive sensation-seeking (Hoyle et al., 2000; Zuckerman & Kuhlman, 2000). Studies have consistently linked sensation-seeking to short-term mating (Franzini & Sidemen, 1994; Linton & Wiener, 2001; Mashegoane et al., 2002; Ripa, Hansen, Mortensen, Sanders, & Reinisch, 2001), including men's patronage of prostitutes (Wilson, Manual, & Lavelle, 1992). Impulsive sensation-seeking is closely associated with the Big Five dimensions of low agreeableness and low conscientiousness (Zuckerman, 1994; Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1994). Not surprisingly, low agreeableness and low conscientiousness have been linked directly to short-term sexual behavior across many studies (Barta & Kiene, 2005; Buss & Shackelford, 1997; Hoyle et al., 2000; Markey, Markey, & Tinsley, 2003; Schmitt, 2004; Trobst, Wiggins, Costa, Herbst, McCrae, & Masters, 2000; Wright & Reise, 1997).

Based on his three-factor model of personality, Eysenck (1971, 1976) has argued that extraversion is central to explaining individual differences in sexuality, including many facets of short-term mating. For example, extraverts are more likely than introverts to endorse favorable attitudes about having multiple sex partners and to engage in sexual intercourse with more partners than introverts do (Eysenck, 1976; Eysenck & Eysenck, 1975). Similar associations between extraversion and short-term mating have been documented by others (Barnes, Malamuth, & Cheek, 1984; Cooper, Agocha, & Sheldon 2000; Costa et al., 1992; Snyder, Simpson, & Gangestad, 1986), including links with extra-pair mating and promiscuous sexual behavior (Buss & Shackelford, 1997; Pinkerton & Abramson, 1995; Schenk & Pfrang, 1986; Schmitt, 1996; Schmitt & Buss, 2001; Wright, 1999). Some investigators have found that neuroticism correlates

with facets of short-term mating (Lameiras Fernandez & Rodriguez Castro, 2003; Zuckerman, 1993), including more sexual risk-taking (Ball & Schottenfeld, 1997; Cooper et al., 2000; McCown, 1992; Naff Johnson, 1997).

*Personality Traits and Short-Term Mating across Nations*

Most of the studies and findings reporting associations between personality traits and short-term mating have been based on responses from college students residing in the United States or the United Kingdom. We attempted to replicate and extend these findings in three ways. First, we examined the entire Big Five model in relation to short-term mating. We were particularly interested in whether some Big Five traits are more closely linked with short-term mating than others. Second, we examined a wide variety of short-term mating variables, including interest in short-term mating, short-term mating behavior, and both the infidelity and promiscuity facets of short-term mating (Schmitt & Buss, 2000). Third, we assessed these variables across multiple college student and community samples from 46 nations representing 10 major regions of the world, including North America (represented by 3 nations; see Table 1), South America (4 nations), Western Europe (8 nations), Eastern Europe (10 nations), Southern Europe (5 nations), the Middle East (3 nations), Africa (5 nations), Oceania (3 nations), South/Southeast Asia (1 nation), and East Asia (4 nations).

Assessing personality and short-term mating across nations is important for several reasons. First, many psychologists have suggested that it is critical to conduct cross-cultural studies on correlates of personality instead of simply assuming their universality (Church & Lonner, 1998). Heine and his colleagues, for example, comment that most personality research has been “conducted by North American researchers at North American universities with North American participants using methodologies that were developed in North America” (Heine, Lehman, Markus, & Kitayama, 1999, p. 768). Such criticisms evoke concerns about the

generalizability of the personality predictors of short-term mating previously described and attest to the necessity of replicating findings across diverse nations. Second, there is reason to believe that nations vary in their Big Five personality traits (McCrae, 2002), including how variable people are along these personality dimensions (Allik & McCrae, 2004; McCrae, 2001). Along with evidence that short-term mating behavior also varies across nations (Schmitt, 2005a; Schmitt et al., 2003), the present study helps to identify whether the same personality systems are universally active in the etiology of short-term mating attitudes and behaviors. Third, if nations do vary in the personality correlates of short-term mating, any application of individual difference findings, such as attempts to reduce the incidence of short-term mating, would need to take into account these cultural caveats.

## Method

### *Samples*

The samples in this study are from the International Sexuality Description Project (ISDP; Schmitt et al., 2003, 2004). The ISDP included a total of 56 nations. However, some participants did not receive, or did not fully respond to, all measures relevant to the present study. Specifically, participants from Chile, Ukraine, Cyprus, Jordan, South Africa, Tanzania, India, Indonesia, Bangladesh, and Malaysia were not included in the present study due to substantial missing or incomplete data. As shown in Table 1, the present dataset included 46 nations from the world regions of North America ( $n = 3,525$ ), South America ( $n = 622$ ), Western Europe ( $n = 2,323$ ), Eastern Europe ( $n = 1,923$ ), Southern Europe ( $n = 1,074$ ), Middle East ( $n = 885$ ), Africa ( $n = 800$ ), Oceania ( $n = 804$ ), South/Southeast Asia ( $n = 211$ ), and East Asia ( $n = 1,075$ ). Following previous work (Schmitt et al., 2003), and in an effort to present the key results as concisely as possible, we will focus most of the current analyses at the level of world region. All nation-level results are available from the first author.

Most samples were comprised of college students; some included college students plus general members of the community; and two (Finland and Mexico) consisted solely of community members (see Table 1). All samples were convenience samples. Most samples were recruited as volunteers, some received course credit for participation, and some received a small monetary reward for their participation. All samples were administered an anonymous self-report survey, and most surveys were returned via sealed envelope or the usage of a drop-box. This form of assessment tends to minimize response biases involving sexual surveys (Alexander & Fisher, 2003; Andersen & Broffitt, 1988). Return rates for college student samples tended to be high (around 95%), although this number was lower in some nations. Return rates for community samples were around 50%. Further details on the sampling and assessment procedures within each nation are provided elsewhere (Schmitt et al., 2003, 2004) and are available from the first author.

### *Procedure*

Participants were provided with a brief description of the study, including the following instructions: “This questionnaire is entirely voluntary. All your responses will be kept confidential and your personal identity will remain anonymous. No identifying information is requested on this survey, nor will any such information be added later to this survey. If any of the questions make you uncomfortable, feel free not to answer them. You are free to withdraw from this study at any time for any reason. This series of questionnaires should take about 20 minutes to complete. Thank you for your participation.” Details on incentives and cover stories used across samples are available from the first author.

### *Measures*

Researchers from non-English-speaking nations were asked to use a translation/back-translation process and to administer the ISDP in their native language. This procedure involved the primary collaborator translating the measures into the native language of the participants, and

then having a second person back-translate into English. Differences between the original English and the back-translation were discussed, and mutual agreements were made on the most appropriate translation. This procedure balances the needs of making the translation meaningful and naturally readable to the native participants, while preserving the original psychological constructs (Brislin, 1993; Church, 2001; van de Vijver & Leung, 2000). Samples from Morocco, Ethiopia, Fiji, the Philippines, and Hong Kong were administered the survey in English, with certain terms and phrases annotated to clarify what were thought to be confusing words for the participants. The translation of the ISDP survey into Flemish used only a translation procedure, as this involved mainly word variant changes from the original Dutch. Finally, pilot studies were conducted in several testing sites to clarify translation and comprehension concerns.

*Demographic measure.* Each sample was presented with a demographic measure including questions about sex (male or female), age, ethnicity, date of birth, sexual orientation, socioeconomic status, and current relationship status. Not all of these questions were included in all samples (e.g., date of birth was considered too invasive in some samples), and all collaborators were asked to adapt the demographic questions appropriately for their sample (e.g., ethnic categories varied).

*Short-term mating measures.* Short-term mating is not a one-dimensional construct. Some individuals seek short-term sexual relationships in addition to their long-term relationships (i.e., infidelity; Wiederman, 1997). Others seek short-term partners as their primary mode of mating (i.e., promiscuity; Paul, McManus, & Hayes, 2000). Still others may possess high levels of interest in short-term mating, but are not able or willing to engage in short-term mating (Jackson & Kirkpatrick, 2007; Webster & Bryan, 2007). Each of these facets of short-term mating are likely interrelated, given that low levels of short-term sexual interest would lead to relatively little short-



term mating behavior. However, because of the potential differences between sexual interests and behaviors, short-term mating was assessed in the present study using multiple measures.

Included first was a 7-item index designed to assess current interest in short-term mating, the *Short-Term Mating Interests* scale (see Schmitt, 2005b). The first three Short-Term Mating Interests items are from the Number of Partners measure (Buss & Schmitt, 1993; Fenigstein & Preston, 2007; Schmitt et al., 2003), which asks using open-ended scales for the number of sex partners desired across various future time periods. Three of the most commonly analyzed items include the time periods of “one month,” “one year,” and “five years” (Schmitt, Shackelford, Duntley, Tooke, & Buss, 2001; Schmitt et al., 2003). For Short-Term Mating Interests, all values on these three items that were above three were truncated down to three to control for extreme values (see Schmitt, in press). The next three Short-Term Mating Interests items are from the Time Known measure (Buss & Schmitt, 1993; Schmitt et al., 2003), which asks the likelihood of consenting to sex with someone who is desirable (using a scale of +3 = *definitely yes* to -3 = *definitely not*) after knowing that person for various time intervals. For Short-Term Mating Interests, the time periods of “one month,” “one year,” and “five years” were used. Also included in Short-Term Mating Interests was the Short-Term Seeking scale (Buss & Schmitt, 1993; Schmitt et al., 2003). This is a single-item 7-point rating scale ranging from 1 (*currently not at all seeking a short-term mate*) to 7 (*currently strongly seeking a short-term mate*). Responses to all seven items (three from the Number of Partners measure, three from the Time Known measure, and the Short-Term Seeking scale) were summed to form the Short-Term Mating Interests scale (see also Schmitt, 2005b). Cronbach’s alpha for Short-Term Mating Interests across the ISDP was .80 (see Table 2).

A 7-item measure of willingness to have sex without commitment, the *Sociosexual Orientation Inventory* (Simpson & Gangestad, 1991) also was administered to participants in the

ISDP. The first three items of the Sociosexual Orientation Inventory are intended to capture behavioral expressions of short-term mating. Item one is: “With how many different partners have you had sex (sexual intercourse) within the past year?” Item two is: “How many different partners do you foresee yourself having sex with during the next five years? (Please give a specific, realistic estimate).” Item three is: “With how many different partners have you had sex on one and only one occasion?” Open-ended blanks are provided after each of the first three questions of the Sociosexual Orientation Inventory. The fourth item is designed to measure covert sociosexual behavior: “How often do (did) you fantasize about having sex with someone other than your current (most recent) dating partner?” This item is followed by an 8-point scale, ranging from 1 (*never*) to 8 (*at least once a day*). Items five, six, and seven are designed to measure sociosexual attitudes. Item five is: “Sex without love is OK.” Item six is: “I can imagine myself being comfortable and enjoying “casual” sex with different partners.” Item seven is: “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.” All three attitudinal items are followed by 9-point scales ranging from 1 (*I strongly disagree*) to 9 (*I strongly agree*). Responses to item seven are reverse-coded so that higher scores indicate more unrestricted sociosexuality. According to Simpson and Gangestad (1991), items five, six, and seven are highly correlated and should be merged to form a single “attitudinal” score. This attitudinal score is then combined with the first four items to form the total Sociosexual Orientation Inventory composite measure. However, each item of the Sociosexual Orientation Inventory composite measure is first weighted using the following formula:  $(5 * \text{Item One}) + (1 * \text{Item Two [with a cap on Item Two of 30]}) + (5 * \text{Item Three}) + (4 * \text{Item Four}) + (2 * \text{Mean of Items Five, Six, and Seven}) = \text{Total Sociosexuality}$  (Simpson & Gangestad, 1991). Using this formula produces a Sociosexual Orientation Inventory

composite such that higher scores are associated with unrestricted sociosexuality (i.e., more short-term mating). In this study, Cronbach's alpha for the Sociosexual Orientation Inventory was .80.

All participants were presented with a questionnaire entitled "*Anonymous Romantic Attraction Survey*" (Schmitt & Buss, 2001). The Anonymous Romantic Attraction Survey asks a series of questions about personal experiences with romantic attraction and mate poaching (i.e., romantically attracting someone else's partner). Each rating scale on the questionnaire asks participants to describe their experiences with a specific attraction behavior. For the frequency of attempting or succumbing to mate poaching behaviors, rating scale values range from 1 (*Never*) to 7 (*Always*). Intermediate values are labeled rarely, seldom, sometimes, frequently, and almost always. For the degree of success in mate poaching, rating scales range from 1 (*Not at all successful*) to 7 (*Very successful*). An intermediate value of 4 (*Moderately successful*) also is provided. These particular frequency and degree anchors tend to maximize the interval-level quality of rating scale data (Spector, 1992). Two items from the Anonymous Romantic Attraction Survey are relevant to the present study. The first question asks about the frequency with which participants have attempted to short-term mate poach, "Have you ever tried to attract someone who was already in a romantic relationship with someone else for a short-term sexual relationship with you?" The second question asks "While you were in a romantic relationship, if others attempted to obtain you as a short-term sexual partner, how successful have they been (if others have never tried, skip this question)?" Responses to this item are a direct indicator of previous infidelities.

Samples were then administered a measure of the "*Sexy Seven*" sexuality attributes (Schmitt & Buss, 2000). The Sexy Seven measure asks participants to rate themselves compared to others they know (using a nine-point scale from 1 = *Extremely Inaccurate* to 9 = *Extremely Accurate*) on a list of 67 sexually-connotative adjectives. The Sexy Seven includes one scale

designed to capture variability in short-term mating, the Relationship Exclusivity scale. The Relationship Exclusivity scale contains the following adjectival items: “adulterous [reverse-scored],” “devoted,” “faithful,” “loose [reverse-scored],” “monogamous,” polygamous [reverse-scored],” “promiscuous [reverse-scored],” and “unfaithful [reverse-scored].” In this study, the Relationship Exclusivity scale had a Cronbach’s alpha of .78 (see Table 2). Further psychometrics on the Relationship Exclusivity scale can be found in Schmitt and Buss (2000). For the purposes of this study, we will refer to the Relationship Exclusivity scale as a “Lack of Relationship Exclusivity” such that it will correlate in the same direction as all other measures of short-term mating.

All measures of short-term mating were intercorrelated among both men and women. Among men, short-term mating interests correlated with sociosexuality,  $r(4207) = +0.48, p < .001$ , with having made short-term mate poaching attempts,  $r(4144) = +0.33, p < .001$ , with having succumbed to short-term mate poaching by others,  $r(2841) = +0.29, p < .001$ , and with a lack of self-described relationship exclusivity,  $r(4105) = +0.37, p < .001$ . Among women, short-term mating interests correlated with sociosexuality,  $r(6155) = +0.49, p < .001$ , with having made short-term mate poaching attempts,  $r(6109) = +0.28, p < .001$ , with having succumbed to short-term mate poaching by others,  $r(4399) = +0.23, p < .001$ , and with a lack of self-described relationship exclusivity,  $r(6029) = +0.28, p < .001$ . Further details concerning the intercorrelations among sexuality measures are available from the first author.

*Personality trait measure.* Participants were asked to complete the *Big Five Inventory* (BFI), a measure of the Big Five that has proven effective across nations and languages (Benet-Martinez & John, 1998). The first scale of the BFI is Extraversion. Extraversion includes individual differences in positive emotionality, sociability, energy levels, and talkativeness, among others (Costa & McCrae, 1992; Lucas, Diener, Grob, Suh, & Shao, 2000; Watson & Clark, 1997).

In this study, Cronbach's alpha for the Extraversion scale was .79. The second scale from the BFI is Agreeableness, which includes individual differences in kindness, empathy, interpersonal trust, and humility (see Graziano & Eisenberg, 1997). In this study, Cronbach's alpha for the Agreeableness scale was .71. The third scale from the BFI is Conscientiousness (i.e., tending to be organized, reliable, hardworking, and possessing high integrity; Hogan & Ones, 1997). In this study, Cronbach's alpha for the Conscientiousness scale was .79. The fourth scale of the BFI measures neuroticism. Neuroticism is related to several personality disorders (Costa & Widiger, 1994) and is conceptually anchored in high anxiety, depression, and vulnerability to stress. In this study, Cronbach's alpha for the Neuroticism scale was .80. The final scale from the BFI is Openness. People high in openness tend to be imaginative, creative, introspective, and cultured (McCrae & Costa, 1997). In this study, Cronbach's alpha for the Openness scale was .77.

### Results

Table 2 includes the means and standard deviations of men and women across all measures of personality and short-term mating. Men and women were significantly different on all measures of personality. Women scored higher on extraversion, agreeableness, conscientiousness, and neuroticism. Men scored higher on openness. In terms of the magnitude or size of the sex differences, Cohen (1988) suggests that an effect size ( $d$ ) of  $\pm 0.20$  be considered small,  $\pm 0.50$  be considered medium, and  $\pm 0.80$  be considered large. Although women scored significantly higher on many personality traits, most of these differences were less than small in magnitude. The one exception involved neuroticism, in which women scored moderately higher than men ( $d = -0.46$ ). Men scored significantly higher on all measure of short-term mating, with small to medium effect sizes in short-term mating interests ( $d = 0.68$ ), sociosexuality ( $d = 0.74$ ), levels of short-term mate poaching attempts ( $d = 0.42$ ), levels of having succumbed to short-term mate poaching ( $d = 0.31$ ), and in having a lack of relationship exclusivity ( $d = 0.53$ ).

*Extraversion and Short-Term Mating across Nations*

As expected from previous research (e.g., Eysenck, 1976; Costa et al., 1992; Hoyle et al., 2000; Wright, 1999), extraversion correlated positively with several measures of short-term mating. Moreover, these correlations were pervasive across sex, and across most major regions of the world (see Table 3).

*North and South America.* Among North American men, higher extraversion was associated significantly with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, and lower relationship exclusivity (i.e., greater infidelity). Among North American women, higher extraversion was associated significantly with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, and acquiescence to short-term poaching attempts. In South America, all of the correlations between extraversion and short-term mating were positive, although only four reached statistical significance (see Table 3). Among South American men, higher extraversion was associated significantly with higher sociosexuality (i.e., more short-term mating), short-term mate poaching attempts, and lower relationship exclusivity. Among South American women, higher extraversion was associated significantly with higher sociosexuality.

*Europe.* In Western Europe, most correlations between extraversion and short-term mating were positive and several reached statistical significance. Among Western European men, higher extraversion was associated significantly with higher sociosexuality and more frequent short-term mate poaching attempts. Among Western European women, higher extraversion was associated significantly with higher sociosexuality, more frequent short-term mate poaching attempts, and lower relationship exclusivity. In Eastern Europe, all associations between extraversion and short-term mating were positive and significant, demonstrating the most consistent links between extraversion and short-term mating for any world region. In Southern Europe, the same pattern

found in Western Europe was evident. Namely, higher extraversion was associated significantly with higher sociosexuality and short-term mate poaching among men and women, and lower relationship exclusivity for women.

*Middle East and Africa.* In the Middle East, extraversion was associated significantly with unrestricted sociosexuality, short-term mate poaching attempts, and lower relationship exclusivity among men. Among Middle Eastern women, higher extraversion was associated significantly only with lower relationship exclusivity. Among African men, higher extraversion was associated significantly with more short-term mating interest and more short-term mate poaching attempts. For women in Africa, higher extraversion was associated significantly with more short-term mating interest and more unrestricted sociosexuality.

*Oceania, South/Southeast Asia, and East Asia.* Among Oceanic men, higher extraversion was associated significantly with interest in short-term mating, unrestricted sociosexuality, and lower relationship exclusivity. Among Oceanic women, higher extraversion was associated significantly only with short-term mate poaching attempts. In South/Southeast Asia, higher extraversion was associated significantly with a more unrestricted sociosexual orientation and more frequent short-term mate poaching attempts. For women in South/Southeast Asia, higher extraversion was only associated significantly with a more unrestricted sociosexuality. In East Asia, higher extraversion was associated significantly with more short-term mating interest, more unrestricted sociosexuality, and more short-term mate poaching attempts among both men and women.

#### *Agreeableness and Short-Term Mating across Nations*

As expected from previous research (Buss & Shackelford, 1997; Costa et al., 1992; Hoyle et al., 2000; Wright, 1999), agreeableness correlated with several measures of short-term mating.

Moreover, these correlations were pervasive across sex, and across many major regions of the world (see Table 3).

*North and South America.* Among North American men, lower agreeableness was associated significantly with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, succumbing to short-term mate poaching attempts, and lower relationship exclusivity (i.e., greater infidelity). Among North American women, lower agreeableness was associated significantly with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, succumbing to short-term mate poaching attempts, and lower relationship exclusivity. Among both men and women, it appeared that the link was strongest between low agreeableness and low relationship exclusivity. For example, using Fisher's  $r$  to  $z$ ' transformation, the correlation between agreeableness and lacking relationship exclusivity among women,  $r(2183) = -.20, p < .001$ , was stronger than the links between agreeableness and interests in short-term mating,  $z = 2.31, p < .01$ , unrestricted sociosexuality,  $z = 1.03, p = .15$ , short-term mate poaching attempts,  $z = 1.37, p = .08$ , or succumbing to short-term mate poaching,  $z = 2.83, p < .01$ . In South America, most of the correlations between agreeableness and short-term mating were negative, although only the correlation with succumbing to short-term mate poaching was significant for men (see Table 3).

*Europe.* In Western Europe, most correlations between agreeableness and short-term mating were negative and all but one reached statistical significance. Among Western European men, lower agreeableness was associated with more short-term mating interest, higher sociosexuality, more frequent short-term mate poaching attempts, and lower relationship exclusivity. Among Western European women, lower agreeableness was associated with every measure of short-term mating. Again, the strongest links were between agreeableness and relationship exclusivity. In Eastern Europe, all associations between agreeableness and short-term



mating were negative and most were significant for both men and women, especially lower relationship exclusivity. In Southern Europe, all associations between agreeableness and short-term mating were negative and all were significant among both men and women. As with most of Europe and North America, the links between agreeableness and relationship exclusivity were numerically the largest associations.

*Middle East and Africa.* In the Middle East, low agreeableness was associated significantly with short-term mating interest, unrestricted sociosexuality, short-term mate poaching attempts, and lower relationship exclusivity among men. Among Middle Eastern women, lower agreeableness was associated significantly with unrestricted sociosexuality, short-term mate poaching attempts, and with lower relationship exclusivity. For both men and women, the links with relationship exclusivity were numerically the greatest. Among African men, lower agreeableness was associated with short-term mating interest, unrestricted sociosexuality, short-term mate poaching attempts, and a lack of relationship exclusivity. For women in Africa, lower agreeableness was associated significantly with more unrestricted sociosexuality and with making short-term mate poach attempts.

*Oceania, South/Southeast Asia, and East Asia.* Among Oceanic men, lower agreeableness was associated significantly with more interest in short-term mating, more unrestricted sociosexuality, having succumbed to short-term mate poaching attempts, and with lower relationship exclusivity. Among Oceanic women, lower agreeableness was associated significantly with all facets of short-term mating. Again, the links between agreeableness and short-term mating were numerically greatest with lower relationship exclusivity. In South/Southeast Asia, lower agreeableness was associated only with lower relationship exclusivity, and this was significant only for men. Among East Asian men, lower agreeableness was associated significantly only with a lack of relationship exclusivity. Among East Asian women, lower agreeableness was associated

significantly with more unrestricted sociosexuality, making short-term mate poach attempts, having succumbed to short-term mate poach attempts, and especially with lower relationship exclusivity.

#### *Conscientiousness and Short-Term Mating across Nations*

As expected from previous research (Buss & Shackelford, 1997; Costa et al., 1992; Hoyle et al., 2000; Wright, 1999), conscientiousness correlated with several measures of short-term mating. Moreover, these correlations were pervasive across sex, and across many major regions of the world (see Table 3).

*North and South America.* Among North American men, lower conscientiousness was associated significantly with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, succumbing to short-term mate poaching attempts, and lower relationship exclusivity (i.e., greater infidelity). Among North American women, lower conscientiousness was associated significantly with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, succumbing to short-term mate poaching attempts, and lower relationship exclusivity. Among both men and women, it appeared the link was largest between conscientiousness and relationship exclusivity. Using Fisher's  $r$  to  $z'$  transformation, the correlation between conscientiousness and lacking relationship exclusivity among women,  $r(2183) = -.25, p < .001$ , was significantly stronger than the links between conscientiousness and interests in short-term mating,  $z = 4.01, p < .001$ , sociosexuality,  $z = 4.66, p < .001$ , short-term mate poaching attempts,  $z = 5.31, p < .001$ , or succumbing to short-term mate poaching,  $z = 4.33, p < .001$ . In South America, most of the correlations between conscientiousness and short-term mating were negative, although only the correlation with relationship exclusivity was significant for men.

*Europe.* In Western Europe, most correlations between conscientiousness and short-term mating were negative. All but one reached statistical significance. Among Western European men,

lower conscientiousness was associated with every measure of short-term mating. Among Western European women, lower conscientiousness was associated with more short-term mating interests, higher sociosexuality, more frequent short-term mate poaching attempts, having succumbed to short-term mate poaching attempts, and with low relationship exclusivity. Again, the numerically greatest links were between conscientiousness and relationship exclusivity for both sexes. Among Eastern European men, low conscientiousness was associated only with low relationship exclusivity. However, all associations between conscientiousness and short-term mating were negative and significant for women. In Southern Europe, all associations between conscientiousness and short-term mating were negative and all were significant among women; especially strong was the negative correlation with relationship exclusivity. Among men from Eastern Europe, the only significant correlation was with short-term mating interests.

*Middle East and Africa.* In the Middle East, all associations between conscientiousness and short-term mating were negative and significant for men, with the exception of sociosexuality. For Middle Eastern women, the only significant correlation was between lower conscientiousness and short-term mate poaching attempts. Among African men, all associations between conscientiousness and short-term mating were negative and significant. Among African women, all associations between conscientiousness and short-term mating were negative and significant, with the exception of relationship exclusivity. Overall, higher levels of conscientiousness were linked with lower levels of short-term mating.

*Oceania, South/Southeast Asia, and East Asia.* Among Oceanic men, lower conscientiousness was associated with lower relationship exclusivity. Among women, lower conscientiousness was associated with more interest in short-term mating, more unrestricted sociosexuality, and with lower relationship exclusivity in Oceania. In South/Southeast Asia, lower conscientiousness was associated with lower relationship exclusivity, but this was significant only

for men. Among South/Southeast Asian men, higher conscientiousness was associated with higher sociosexuality. This is the only instance across the ISDP in which short-term mating was significantly linked with higher conscientiousness. Among East Asian men, lower conscientiousness was associated only with lower relationship exclusivity. Among East Asian women, lower conscientiousness was associated with more short-term mating interest and with lower relationship exclusivity.

#### *Neuroticism and Short-Term Mating across Nations*

As expected from previous research (Buss & Shackelford, 1997; Costa et al., 1992; Hoyle et al., 2000; Wright, 1999), neuroticism correlated with several measures of short-term mating (see Table 3). However, these correlations were much less pervasive across sex and world regions compared to previous findings.

*North and South America.* Among North American men, neuroticism was not associated with short-term mating orientation. Among North American women, in contrast, higher neuroticism was significantly associated with interest in short-term mating, unrestricted sociosexuality, short-term mate poaching attempts, succumbing to short-term mate poaching attempts, and lower relationship exclusivity. This is the first set of findings in which men and women displayed conspicuously different correlational profiles. For men, neuroticism was not an indicator of short-term mating, but for women it was an indicator of all aspects of short-term mating—from short-term mating interests to lacking relationship exclusivity. Most of these sex differences in neuroticism-sexuality links either were statistically significant or at least approached significance. For example, using Fisher's  $r$  to  $z$ ' transformation, the correlation between neuroticism and short-term mating interests in women,  $r(1962) = .05$ ,  $p < .05$ , was marginally stronger than the link between neuroticism and short-term mating interests in men,  $z = 1.31$ ,  $p < .10$ , and the correlation between neuroticism and lacking relationship exclusivity in women,

$r(2183) = .06, p < .01$ , was significantly stronger than the link between neuroticism and lacking relationship exclusivity in men,  $z = 1.96, p < .05$ . In South America, the correlations between neuroticism and short-term mating did not reach statistical significance.

*Europe.* In Western Europe, the correlations between neuroticism and short-term mating did not reach statistical significance, with the exception that among women neuroticism positively correlated with succumbing to short-term mate poaching attempts by others. Among Eastern European men and women, neuroticism was negatively associated with interests in short-term mating and sociosexuality. In Southern Europe, none of the associations between neuroticism and short-term mating reached the level of statistical significance.

*Middle East and Africa.* In the Middle East, men with higher neuroticism reported higher levels of short-term mating interests. Middle Eastern women who reported higher neuroticism were likely to also report having made short-term mate poaching attempts and having succumbed to the poaching attempts of others. Among African men, higher neuroticism was associated with short-term mate poaching attempts and lower relationship exclusivity. None of the associations between neuroticism and short-term mating reached the level of statistical significance among African women.

*Oceania, South/Southeast Asia, and East Asia.* The only significant relationship between neuroticism and short-term mating in Oceania was the link between high neuroticism and high rates of short-term mate poaching attempts among women. In South/Southeast Asia, the only significant relationship between neuroticism and short-term mating was the link between high neuroticism and low sociosexuality among men. In East Asia, there were not significant associations between neuroticism and short-term mating.

*Openness and Short-Term Mating across Nations*

According to previous research (e.g., Costa et al., 1992; Hoyle et al., 2000; Wright, 1999), openness should be relatively unrelated to measures of short-term mating. We found several significant associations between openness and short-term mating, but these associations were inconsistent across sex and world regions (see Table 3).

*North and South America.* Among North America men, openness was negatively correlated with all measures of short-term mating. The two measures associated with infidelity were related significantly to low openness, including succumbing to short-term mate poaches and lacking relationship exclusivity. North American women, in contrast, displayed the opposite pattern. Those who scored higher on openness expressed more interest in short-term mating and were sociosexually unrestricted. This was the second instance where men and women displayed different correlational profiles. For men, openness was an indicator of lower levels of extra-pair short-term mating,  $r(1222) = -.10, p < .001$ , whereas for women openness was an indicator of higher levels of short-term mating interest,  $r(1962) = .11, p < .001$ , and unrestricted sociosexuality,  $r(2239) = .11, p < .001$ . In South America, the correlations between openness and short-term mating did not reach statistical significance for women. However, among South American men openness was associated with higher sociosexuality, more short-term mate poaching attempts, succumbing to short-term mate poaching attempts, and lower relationship exclusivity.

*Europe.* In Western Europe, the correlations between openness and short-term mating did not reach statistical significance among men, with the exception that openness correlated positively with sociosexuality. Among Western European women, openness correlated positively with short-term mating interests and sociosexuality. In Eastern Europe, openness correlated significantly and positively with most measures of short-term mating for both men and women. The exceptions were that openness did not correlate with succumbing to short-term mate poaching

attempts or with lower relationship exclusivity. In Southern Europe, openness correlated significantly and positively with most measures of short-term mating among women, but only sociosexuality correlated significantly with openness among men.

*Middle East and Africa.* Among women in the Middle East, openness correlated positively and significantly with sociosexuality. There were no significant correlations for Middle Eastern men. In Africa, most correlations were in the positive direction, but few were significant. African men with higher openness reported higher levels of sociosexuality, but no such correlation was identified for African women.

*Oceania, South/Southeast Asia, and East Asia.* The only significant relationship between openness and short-term mating in Oceania was the link between openness and lower relationship exclusivity among women. Oceanic women who lacked relationship exclusivity scored lower on openness. In South/Southeast Asia, both men and women who lacked relationship exclusivity scored lower on openness. However, among men from South/Southeast Asia higher openness was associated with higher sociosexuality. In East Asia, the only significant relationship between openness and short-term mating was the link between higher openness and higher rates of short-term mate poaching attempts among men. Given the disputed nature of openness as a fundamental factor of personality (John & Srivastava, 1999; McCrae & Costa, 1997), these inconsistent results are not surprising.

#### *Personality and Short-Term Mating in the Worldwide ISDP Sample*

Looking across the total 46-nation sample of the ISDP (see bottom of Table 3), extraversion was positively correlated with every measure of short-term mating among both men and women (after controlling for the effects of individual nation). Controlling for the effect of nation was necessary for if an individual nation was particularly high on both extraversion and short-term mating this could artificially inflate the correlation between these two variables. Low

agreeableness and low conscientiousness were indicative of short-term mating across both sexes and all measures of short-term mating in the worldwide sample. Neuroticism was negatively related to sociosexuality among men, but was positively associated with short-term mate poaching attempts, succumbing to poaching attempts, and a lack of relationship exclusivity in women. Openness was positively linked to most measures of short-term mating in men and women across the worldwide sample.

*Personality Traits as Risk-Factors for Short-Term Mating Tendencies*

In addition to considering each trait individually, we examined how the Big Five dimensions of personality served, in isolation and in combination, as predictors of short-term mating. Across the entire ISDP, we performed a standard multiple regression on each measure of short-term mating, entering the Big Five traits, sex of participant, and nation of participant simultaneously as predictor variables. In each case, the Big Five dimensions contributed unique predictive power after controlling for all other variables. For example, considering the semipartial correlations between personality traits and short-term mating interests, extraversion ( $sr^2 = .09, p < .001$ ), agreeableness ( $sr^2 = -.07, p < .001$ ), conscientiousness ( $sr^2 = -.11, p < .001$ ), neuroticism ( $sr^2 = -.02, p < .05$ ), and openness ( $sr^2 = .08, p < .001$ ) all shared unique variance with short-term mating interests. Overall, 15% of the variance in short-term mating interests was accounted for by all predictor variables ( $R = .39, p < .001, \text{Adjusted } R^2 = .15$ ), about 3% of which came from the unique contributions of the Big Five, 1.5% came from shared variance among the Big Five, 0.5% was attributable to the nation of the participant, and 10% was attributable to the sex of participant. The amount of variance in short-term mating explained by sex of participant was twice the amount explained by personality traits and nation combined (see also Schmitt, 2005a).

In another attempt to examine the individual and combined effects of personality on sexuality, we categorized each participant in the ISDP as either high or low on each of the Big



Five using a median split. We treated high extraversion, low agreeableness, low conscientiousness, high neuroticism (for women), low neuroticism (for men), and high openness as “predictive” of short-term mating. Low extraversion, high agreeableness, high conscientiousness, low neuroticism (for women), high neuroticism (for men), and low openness were treated as “not predictive” of short-term mating. As seen in Figure 1, conscientiousness showed the largest difference between predictive and not predictive personality traits,  $t(10292) = 10.04, p < .001, d = .20$ , followed by openness  $t(10291) = 8.31, p < .001, d = .16$ , agreeableness,  $t(10291) = 8.00, p < .001, d = .16$ , extraversion,  $t(10290) = 5.55, p < .001, d = .11$ , and neuroticism,  $t(10290) = 4.18, p < .001, d = .08$ .

Each person was also given an overall “personality risk” score, ranging from 0 to 5, depending on how many of their Big Five traits were in the predictive direction of short-term mating. For example, if a woman scored high on extraversion, low on agreeableness, low on conscientiousness, high on neuroticism, and high on openness, she received a personality risk score of 5 because each of her Big Five traits were predictive of short-term mating. If a woman scored low on extraversion, high on agreeableness, high on conscientiousness, low on neuroticism, and low on openness, she received a personality risk score of 0. Overall, 52 men (1% of men) and 231 women (4% of women) had a score of 0 personality risk for short-term mating, 479 men (11%) and 1006 women (16%) had a personality risk score of 1, 1312 men (31%) and 1946 women (32%) had a personality risk score of 2, 1436 men (34%) and 1799 women (29%) had a personality risk score of 3, 758 men (18%) and 876 women (14%) had a personality risk score of 4, and 138 men (3%) and 259 women (4%) had a personality risk score of 5.

For each sexuality measure, personality risk was significantly related to short-term mating, with incremental increases in personality risk associated with higher levels of short-term mating.

For example, the overall main effect of personality risk on short-term mating interests was

significant,  $F(5, 10280) = 39.16, p < .001$ , and according to Tukey's *HSD* most of the differences between levels of personality risk (i.e., the difference between 0 and 1, 1 and 2, 2 and 3, and 3 and 4) were significant. However, the difference between levels 4 and 5 was not significantly different.

In Figure 2, we depict the short-term mating interests of men and women separately across the different personality risk categories. The main effect of sex on short-term mating interests was significant,  $F(1, 10280) = 382.32, p < .001$ , as was the interaction of personality risk and sex,  $F(5, 10280) = 3.82, p < .01$ , indicating that the effects of personality risk on short-term mating interests were different for men and women. According to Tukey's *HSD* within each sex, among men the incremental increases in personality risk were significant only between 1 and 2, and 2 and 3. Once three personality traits were predictive of short-term mating, further personality indicators of short-term mating did not add predictive power for men. Among women, the incremental increases in personality risk were significant only between 1 and 2, and 3 and 4. After two personality traits were predictive of short-term mating, it took two additional personality indicators of short-term mating to add significant predictive power.

#### *Nation-Level Relationships Between Personality Traits and Short-Term Mating*

In addition to relating personality traits to short-term mating within regions, we correlated national profiles of personality and short-term mating (see Table 4). Although nation-level scores do not always correlate in the same way as individual-level scores (assuming so is often called the ecological fallacy), we expected nation-level correlations to mirror some of those found within regions, especially the robust findings for extraversion, agreeableness, and conscientiousness.

As seen in Table 4, national levels of extraversion tended to positively correlate with national levels of short-term mating. This association was sometimes larger among women's scores than among men's, such as the marginal difference in short-term mating interest correlations (based on Fisher's  $r$  to  $z'$ ;  $z = 1.36, p < .10$ ). A scatterplot of women's national

extraversion scores related to women's nation-level sociosexuality,  $r(44) = 0.51, p < .001$ , is presented in Figure 3. Many of the most extraverted women, as well as women with the highest sociosexual levels, tend to be found in Europe (e.g., Serbia, Croatia, Switzerland, and Austria). The most introverted women, who were also low on sociosexuality, tended to reside in Asia and Africa (e.g., South Korea, Japan, Hong Kong, and Ethiopia). Very few nations had introverted women who scored high on sociosexuality, although French and Belgian women came close to this profile in that they were relatively introverted and were moderate on sociosexuality.

National levels of agreeableness were associated with lower short-term mating tendencies at the national level. For example, in nations where men were disagreeable, national levels of short-term mating interest were higher (see Figure 4). The most agreeable men tended to reside in Africa (e.g., Congo, Ethiopia, Botswana, and Zimbabwe), and these same nations contained men who were very low in short-term mating interests. In contrast, the most disagreeable men tended to reside in Europe and South America (e.g., Latvia, Lithuania, Argentina, and Peru), and these nations had men who were relatively high in short-term mating interests. This same trend was observed in terms of men succumbing to short-term mate poaching. Among nations with disagreeable women, men tended to go along with short-term mate poaching as well.

National levels of conscientiousness were sometimes associated with lower short-term mating tendencies. For example, higher levels of national conscientiousness were associated with lower levels of short-term mating interests in men, just as with the individual-level analyses. Looking at the cross-sex linkages, women's conscientiousness was linked to increased levels of sociosexuality and to more short-term mate poaching among men. However, women's conscientiousness was negatively correlated with men's lack of relationship exclusivity.

National levels of neuroticism were almost always negatively linked with national short-term mating tendencies. For example, in nations with neurotic men, national levels of

sociosexuality were lower. The most neurotic men tended to reside in Asian nations (e.g., Japan, South Korea, Taiwan, and Hong Kong), the same nations where men have relatively low levels of sociosexuality (see Figure 5). The nations with the least neurotic men (e.g., Morocco, Finland, Slovenia, and Croatia) tended to have men who scored high on sociosexuality. In the individual-level analyses, the findings were rather equivocal—sometimes neuroticism was linked with less short-term mating, sometimes with more short-term mating (e.g., men in the Middle East and Africa). However, the national-level findings were clear, with higher levels of neuroticism linked with less short-term mating in men. Looking at the cross-sex linkages, neuroticism among women was sometimes linked with increased short-term mating in men (e.g., lack of relationship exclusivity).

Finally, national levels of openness were positively associated short-term mating, with the exception of indicators of extra-pair mating. In nations where men were high on openness, there was a trend for men to have higher short-term mating interests and to have higher sociosexuality. In nations where women were high on openness, there was a trend for women to have higher short-term mating interests and to have higher sociosexuality. Women's high openness was also associated with increased short-term mating among men, including higher national levels of men's short-term mating interests, sociosexuality, and short-term mate poaching attempts.

Overall, the relationships among national profiles of personality traits and national profiles of short-term mating tended to mirror those identified at the individual level. Extraverted nations were, on average, more short-term oriented than introverted nations. Disagreeable nations were more short-term oriented than agreeable nations. Men were more short-term oriented in nations low on conscientiousness, and women's conscientiousness was linked to greater short-term mating among men. Neurotic nations tended to have lower short-term mating tendencies, although across

the sexes women's neuroticism was linked with higher short-term mating in men. Higher levels of openness were generally associated with more short-term mating in both sexes.

### Discussion

As part of the International Sexuality Description Project, 13,243 participants from 46 nations responded to self-report measures of personality and sexuality. As expected, several traits showed consistent links with short-term mating. Extraversion was universally associated with interest in short-term mating, unrestricted sociosexuality, having engaged in short-term mate poaching attempts, having succumbed to short-term poaching attempts, and lacking relationship exclusivity. Low agreeableness and conscientiousness also were related to short-term mating, especially with measures of extra-pair mating (i.e., succumbing to short-term poaching attempts and lacking relationship exclusivity). Neuroticism and openness were related to short-term mating, although these links were less consistent across sex and world region.

#### *Some Traits Correlate with Short-Term Mating More than Others*

As expected, three traits from among the Big Five stood out as consistently related to short-term mating. Within regions and across nations, higher extraversion, lower agreeableness, and lower conscientiousness are linked with higher levels of short-term mating. Neuroticism was an equivocal correlate, being associated with more short-term mating in some nations and less short-term mating in others. Openness also was inconsistently related to short-term mating, with the association depending on both sex and world region.

Future research might profitably investigate why some traits appear to relate more consistently to short-term mating than others. One factor might be the relationship between personality and sexual libido or lust (Regan & Berscheid, 1999). Extraversion, for example, has been linked to higher libido (Eysenck, 1976), which might help explain why extraverts engage in more mating overall. To explain mating specific to the short-term context, however, the traits of

low agreeableness and low conscientiousness may be necessary additions. Low agreeableness and low conscientiousness have been linked with social dominance and antisocial tendencies (Paulhus & Williams, 2002; Wiebe, 2004)—tendencies that may serve as key factors in turning short-term mating desires into short-term mating behavior (Aromaeki, Lindman, & Eriksson, 2002; Asendorpf, 1998; Linton & Wiener, 2001; McHoskey, 2001; Mealey, 1995), especially extra-pair mating (Egan & Angus, 2004; Schmitt, 2004; Schmitt et al., 2004) and risky sexual practices (McMahon, Malow, & Penedo, 1998).

#### *Sex Differences in the Correlates of Short-Term Mating*

Some of the personality correlates of short-term mating varied in systematic ways across sex. Extraversion was associated with short-term mating among men and women. Similarly, low agreeableness and conscientiousness were associated with short-term mating regardless of sex. However, the correlational profile of neuroticism displayed apparent sex differences. In North America, neuroticism was associated with increased short-term mating only among women. This was also true among women from Western Europe, Middle East, and Oceania. In contrast, neuroticism among women and men from Eastern Europe was associated with decreased short-term mating, and men from the Middle East and Africa who were more neurotic were more oriented toward short-term mating. Overall, neuroticism was usually associated with decreased short-term mating in men (e.g., lower sociosexuality) and increased short-term mating in women (e.g., especially increased levels of infidelity).

Among North America men, openness was negatively correlated with all measures of short-term mating, especially indicators of extra-pair mating. North American women displayed a different pattern. Those women who scored high on openness were more likely to express interest in short-term and to be sociosexually unrestricted. This was the second instance, after the neuroticism correlates, where men and women displayed apparently different personality-sexuality

correlations (see also Clark, 2006). However, across most regions of the world both men and women who were high in openness were likely to have higher levels of short-term mating interests and behaviors.

#### *National Differences in Personality and Short-Term Mating*

In some nations people are more extraverted than in others (McCrae, 2001), and in some nations people are more oriented toward short-term mating than in others (Schmitt, 2005a; Schmitt et al., 2003). In the ISDP, national variability in short-term mating tends to track national variability in extraversion. In nations with more introverted people, such as South Korea, Hong Kong, Japan, and Ethiopia, short-term mating tends to be lower. This is true within men and within women, and within nations and across nations. Agreeableness and conscientiousness show similar patterns. In nations that score lower on agreeableness, such as Latvia, Lithuania, Argentina, and Peru, short-term mating interests are higher. In nations with higher agreeableness, such as most African nations, short-term mating is lower. In nations with higher neuroticism, such as Japan, South Korea, Taiwan, and Hong Kong, short-term mating is lower than in nations with lower levels of neuroticism, such as Finland, Slovenia, Croatia, and New Zealand.

#### *Limitations and Alternative Explanations*

The present research has several limitations. First, the personality and sexuality questionnaires in the ISDP, like all individual difference questionnaires, have a certain degree of measurement error (Andersen & Broffitt, 1988; Catania, McDermott, & Pollack, 1986). In the context of the many translations involved in the ISDP, it is likely that measurement error played a role in limiting our findings. However, as many of the findings were replicated across sexes and nations, it is plausible that lesser measurement error would produce larger correlations than those reported in this article. Still, using additional techniques such as the bogus pipeline procedure (Alexander & Fisher, 2000) and accounting for social desirability biases (Eysenck & Eysenck,

1971; Paulhus & Reid, 1991), may improve the veridicality of self-report responses to ISDP surveys in the future.

Second, many of the current samples were relatively small (see Table 1), and the sampling techniques used were convenience-based, rather than representative. As a result, the present findings should be interpreted with care. Because the ISDP primarily sampled college students, any generalizations beyond this population may be inappropriate. Future research taking sampling factors into account, and utilizing true representative sampling of nations and their many co-cultures, will be needed to verify the current personality-sexuality links.

Third, there may be a host of extraneous variables that account for the personality-sexuality associations identified in the ISDP. Observed regional differences in the ISDP may be due to cultural disparities in the links between personality and short-term mating, but they may also result from inappropriate translations or the non-identical response styles across nations (Church & Lonner, 1998; Heine, Buchtel, & Norenzayan, 2008; McCrae, 2001; van de Vijver & Leung, 2000). Cultural values and beliefs outside the realm of the Big Five might also function as third variable causes of the links between personality and short-term mating (e.g., Bond et al., 2004; Hofstede, 2001).

Finally, in this research we have assumed that personality traits lead to short-term mating. An equally plausible alternative is that the causal links between personality and sexuality flow in the opposite direction. That is, short-term mating interests and behaviors may lead to the development of particular personality traits. Engaging in mate poaching, for example, could lead people to become disagreeable just as much as disagreeableness could lead to mate poaching. Personality and sexuality also could reinforce one another, serving as a feedback loop that once initiated becomes difficult to disengage. Such could be the origin of adult romantic attachment



styles, love styles, and other psychological constructs that involve the confluence of personality traits and romantic relationships (Schmitt, 2005b).

#### *Implications and Future Research Directions*

This research makes several contributions to our understanding of the links between personality and sexuality. First, the findings previously reported using only American and European samples have now been replicated and extended across many different nations, including non-Western nations. The traits of extraversion, agreeableness, and conscientiousness have been implicated in short-term mating across 10 major regions of the world. Second, our findings show that sex plays a role in moderating some personality-sexuality linkages (e.g., neuroticism), and that sex is a larger predictor of short-term mating than either personality traits or national origin (see also Schmitt, 2005a). Third, for the first time nations have been shown to vary along personality dimensions in ways that directly relate to short-term mating attitudes and behaviors at the national level. This provides new evidence that personality and sexuality are psychologically and sociologically intertwined.

An implication of the current findings is that if health care workers wish to attempt to control short-term mating (as a key risk factor for the spread of sexually-transmitted diseases, for example), it may be most effective to concentrate on the developmental and physiological factors associated with extraversion, agreeableness, and conscientiousness (Graziano & Eisenberg, 1997; Hogan & Ones, 1997; Lucas et al., 2000; Watson & Clark, 1997; Zuckerman, 1994), rather than other traits. In each case, however, the moderating effects of local culture should be incorporated (Church, 2000). Future research might explore whether certain personality clusters or “types” that reflect combinations of high extraversion, low agreeableness, and low conscientiousness predispose individuals toward short-term mating in the same way across all cultures (Asendorpf & van Aken, 1999).

Future researchers also might examine whether certain sub-traits or facets of extraversion, agreeableness, and conscientiousness are more important in predicting short-term mating than others. The Big Five Inventory (Benet-Martinez & John, 1998) used in the ISDP is not able to distinguish among the different facets of the Big Five. Neither is it designed to diagnose extreme and maladaptive levels of these traits. The relationship between extraversion and short-term mating may be driven in some nations by those with high levels of positive emotion, for example, whereas in other nations the link may be based on high activity level. The relationship between agreeableness and short-term mating may be driven in women by extremely low trust, whereas among men it is low empathy that leads to short-term mating. The current study, with its use of higher-order personality traits and broad-based sexuality measures, may have just scratched the surface of important personality-sexuality relationships and their cultural variations.

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Table 1: Sample sizes, sampling type, and language of survey across 46 nations and 10 world regions of the International Sexuality Description Project

World Regions	Sample Size		Sample Type	Language
	Men	Women		
<u>North America</u>	1,269	2,256		
Canada	329	618	College Students	English/French
Mexico	90	100	Community-Based	Spanish
United States of America	850	1,538	College Students	English
<u>South America</u>	293	329		
Argentina	107	136	College Students	Spanish
Bolivia	66	54	College Students	Spanish
Brazil	37	48	College Students	Portuguese
Peru	83	91	College Students	Spanish
<u>Western Europe</u>	852	1,471		
Austria	167	223	College/Community	German
Belgium (Flanders)	129	284	College Students	Dutch (Flemish)
Finland	26	67	Community-Based	Finnish
France	46	53	College Students	French
Germany	218	372	College/Community	German
Netherlands	92	111	College Students	Dutch
Switzerland	57	94	College Students	German
United Kingdom	117	268	College/Community	English
<u>Eastern Europe</u>	841	1,082		
Croatia	98	100	College Students	Croatian
Czech Republic	72	98	College Students	Czech
Estonia	60	84	College Students	Estonian
Latvia	75	78	College Students	Latvian
Lithuania	39	38	College Students	Lithuanian
Poland	210	379	College Students	Polish
Romania	97	103	College Students	Romanian
Serbia	91	94	College Students	Serbian
Slovakia	55	68	College Students	Slovak
Slovenia	44	40	College Students	Slovenian
<u>Southern Europe</u>	406	668		
Greece	37	153	College Students	Greek
Italy	91	108	College/Community	Italian
Malta	103	119	College Students	English
Portugal	98	131	College Students	Portuguese
Spain	77	157	College Students	Spanish

(Table Continues)



Table 1 (Continued): Sample sizes, sampling type, and language of survey across 46 nations and 10 world regions of the International Sexuality Description Project

World Regions	Sample Size		Sample Type	Language
	Men	Women		
<u>Middle East</u>	411	474		
Israel	130	170	College Students	Hebrew
Lebanon	102	117	College Students	English
Turkey	179	187	College/Community	Turkish
<u>Africa</u>	421	379		
Botswana	94	114	College Students	English
Congo, Dem. Rep. of	86	48	College/Community	French
Ethiopia	90	60	College/Community	English
Morocco	55	67	College Students	English
Zimbabwe	96	90	College Students	English
<u>Oceania</u>	341	463		
Australia	176	261	College Students	English
Fiji & Pacific Islands	65	50	College/Community	English
New Zealand	100	152	College Students	English
<u>South/Southeast Asia</u>	93	118		
Philippines	93	118	College Students	English
<u>East Asia</u>	518	557		
Hong Kong (China)	90	94	College Students	English
Japan	125	86	College Students	Japanese
Korea, Rep. of	189	289	College Students	Korean
Taiwan	114	88	College Students	Mandarin
Worldwide ISDP Sample:	5,445	7,798	College/Community	24 Languages

Note: All samples were convenience samples. Further details on sampling methods within each nation are available from the author. Additional samples from Chile, Ukraine, Cyprus, Jordan, South Africa, Tanzania, Bangladesh, India, Indonesia, and Malaysia were included in the International Sexuality Description Project, but participants in those samples did not complete all measures used in this study.

Table 2

Descriptive Statistics and Sex Differences for Personality and Short-Term Mating Scales in the International Sexuality Description Project

	Men		Women		Sex Differences	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>d</i>
BFI: Extraversion ( $\alpha = .79$ )	3.32	0.68	3.43	0.73	-8.00***	-0.14
BFI: Agreeableness ( $\alpha = .71$ )	3.57	0.59	3.68	0.60	-10.16***	-0.18
BFI: Conscientiousness ( $\alpha = .79$ )	3.39	0.66	3.50	0.66	-9.89***	-0.18
BFI: Neuroticism ( $\alpha = .80$ )	2.79	0.72	3.14	0.75	-26.53***	-0.46
BFI: Openness ( $\alpha = .77$ )	3.71	0.60	3.68	0.60	2.68**	0.05
Short-Term Mating Interests ( $\alpha = .80$ )	11.64	7.16	6.77	6.37	36.36***	0.68
Sociosexual Orientation Inventory ( $\alpha = .80$ )	46.85	29.74	27.59	19.66	44.85***	0.74
Mate Poaching Attempts (one item scale)	2.33	1.43	1.78	1.15	24.31***	0.42
Succumbed to Poaching (one item scale)	2.85	1.87	2.30	1.70	14.62***	0.31
Relationship Exclusivity ( $\alpha = .78$ )	6.66	1.43	7.39	1.25	-30.49***	-0.53

Note: \*\* =  $p < .01$ , \*\*\* =  $p < .001$ . In general,  $d$  values of  $\pm .20$  are considered small,  $\pm .50$  are moderate, and  $\pm .80$  are large (Cohen, 1988).

Table 3

Big Five Personality Traits Related to Short-Term Mating among Men and Women across 10 World Regions of the International Sexuality Description Project

World Region	Personality Traits									
	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness	
	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>
<u>North America</u>										
Short-Term Mating Interests	.11***	.06**	-.16***	-.13***	-.17***	-.13***	.00	.05*	-.02	.11***
Unrestricted Sociosexual Orientation	.13***	.13***	-.14***	-.17***	-.07*	-.11***	.00	.04*	-.03	.11***
Mate Poaching Attempts	.15***	.08***	-.12***	-.16***	-.06*	-.09***	.03	.06**	-.01	.01
Succumbed to Poaching	.05	.05*	-.07*	-.11***	-.11***	-.12***	.02	.08***	-.07*	.02
Lack of Relationship Exclusivity	.13***	.04	-.18***	-.20***	-.19***	-.25***	-.01	.06**	-.10***	-.01
<u>South America</u>										
Short-Term Mating Interests	.09	.09	.00	-.07	-.04	-.09	-.12	-.01	.03	.05
Unrestricted Sociosexual Orientation	.12*	.16**	-.07	-.07	-.11	.05	-.11	-.03	.12*	.10
Mate Poaching Attempts	.13*	.06	-.11	-.11	.00	-.05	-.08	.06	.13*	-.09
Succumbed to Poaching	.02	.08	-.15*	.05	-.01	.03	.01	.03	.13*	.12
Lack of Relationship Exclusivity	.23***	.06	-.11	.08	-.13*	-.11	-.09	-.09	.12*	.06
<u>Western Europe</u>										
Short-Term Mating Interests	-.03	.03	-.12**	-.08**	-.16***	-.20***	-.02	.01	-.02	.08**
Unrestricted Sociosexual Orientation	.12***	.12***	-.12***	-.13***	-.08*	-.13***	-.04	.00	.07*	.08**
Mate Poaching Attempts	.13***	.09***	-.13***	-.10***	-.09**	-.04	-.01	.02	.03	.05
Succumbed to Poaching	.04	-.01	-.04	-.06*	-.11**	-.14***	-.02	.08**	.03	.04
Lack of Relationship Exclusivity	.04	.09***	-.16***	-.14***	-.18***	-.20***	.01	.00	.00	.03

(Table continues)

Table 3 (Continued)

Big Five Personality Traits Related to Short-Term Mating among Men and Women across 10 World Regions of the International Sexuality Description Project

World Region	Personality Traits									
	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness	
	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>
<u>Eastern Europe</u>										
Short-Term Mating Interests	.11**	.13***	-.06	-.06	-.01	-.16***	-.11**	-.11***	.09*	.11**
Unrestricted Sociosexual Orientation	.23***	.21***	-.13***	-.15***	.01	-.13***	-.07*	-.07*	.08*	.16***
Mate Poaching Attempts	.19***	.11***	-.15***	-.17***	-.02	-.10***	.01	-.04	.09*	.09**
Succumbed to Poaching	.10*	.09**	-.01	-.08*	.03	-.13***	.03	.06	.06	.01
Lack of Relationship Exclusivity	.14***	.08**	-.24***	-.20***	-.09**	-.12***	.01	.05	.00	.06
<u>Southern Europe</u>										
Short-Term Mating Interests	.02	.02	-.15**	-.11**	-.15**	-.18***	-.01	.05	.01	.10*
Unrestricted Sociosexual Orientation	.13**	.16***	-.16***	-.22***	-.05	-.14***	-.06	.05	.10*	.19***
Mate Poaching Attempts	.14**	.10**	-.16***	-.12**	-.08	-.14***	-.01	.05	.07	.11**
Succumbed to Poaching	.07	.06	-.12*	-.09*	-.10	-.10*	.04	-.02	.02	.04
Lack of Relationship Exclusivity	.10	.16***	-.17***	-.17***	-.11*	-.22***	.00	.04	.03	.14***
<u>Middle East</u>										
Short-Term Mating Interests	.02	.07	-.14**	-.07	-.26***	-.02	.17**	-.06	-.08	.08
Unrestricted Sociosexual Orientation	.18***	.09	-.18***	-.12**	.02	.02	-.02	-.02	.10	.13**
Mate Poaching Attempts	.13**	.01	-.16**	-.13**	-.11*	-.13**	.10	.10*	.01	.04
Succumbed to Poaching	.06	-.01	-.07	-.04	-.13*	-.01	.03	.11*	-.09	-.04
Lack of Relationship Exclusivity	.16**	.11*	-.21***	-.17***	-.17***	-.09	.02	.00	.05	.02

(Table continues)

Table 3 (Continued)

Big Five Personality Traits Related to Short-Term Mating among Men and Women across 10 World Regions of the International Sexuality Description Project

World Region	Personality Traits									
	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness	
	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>
<u>Africa</u>										
Short-Term Mating Interests	.13*	.13*	-.24***	-.06	-.30***	-.24***	.08	-.01	.10	-.02
Unrestricted Sociosexual Orientation	.08	.10*	-.14**	-.10*	-.23***	-.20***	.07	-.03	.11*	.04
Mate Poaching Attempts	.15**	.07	-.26***	-.11*	-.20***	-.17**	.09	-.01	.07	.07
Succumbed to Poaching	.03	.04	-.10	-.12	-.14*	-.18**	.21***	.07	.10	.03
Lack of Relationship Exclusivity	-.02	.07	-.23***	-.08	-.25***	-.10	.20***	.00	.00	.00
<u>Oceania</u>										
Short-Term Mating Interests	.16**	.05	-.13*	-.16***	-.11	-.13**	-.11	.08	.08	.03
Unrestricted Sociosexual Orientation	.17**	.06	-.12*	-.12**	-.10	-.12**	-.02	.00	.00	.06
Mate Poaching Attempts	.04	.14**	-.08	-.14**	-.04	-.06	.04	.10*	-.06	-.01
Succumbed to Poaching	.04	.02	-.17**	-.11*	-.13	-.09	.05	.10	.08	.01
Lack of Relationship Exclusivity	.15**	.05	-.25***	-.22***	-.27***	-.17***	.04	.02	.08	-.13**
<u>South/SE Asia</u>										
Short-Term Mating Interests	.14	.05	.07	-.03	.15	.10	-.17	-.10	-.10	-.11
Unrestricted Sociosexual Orientation	.29**	.22*	.09	.00	.21*	-.04	-.24*	-.01	.30**	-.06
Mate Poaching Attempts	.25*	.17	.03	-.06	.11	-.06	-.14	.03	.05	.01
Succumbed to Poaching	.22	-.12	-.13	.13	.15	-.05	-.16	.14	.05	-.10
Lack of Relationship Exclusivity	-.06	.09	-.35***	-.15	-.22*	-.14	.02	.15	-.28**	-.24**

(Table continues)

Table 3 (Continued)

Big Five Personality Traits Related to Short-Term Mating among Men and Women across 10 World Regions of the International Sexuality Description Project

World Region	Personality Traits									
	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness	
	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>
<u>East Asia</u>										
Short-Term Mating Interests	.10*	.10*	-.04	-.08	-.05	-.09*	.03	.06	-.01	.01
Unrestricted Sociosexual Orientation	.18***	.09*	-.08	-.17***	.04	-.08	-.04	-.01	.08	.08
Mate Poaching Attempts	.23***	.10*	-.03	-.13**	-.02	-.05	-.03	.05	.09*	.05
Succumbed to Poaching	.12	.11	-.01	-.20***	.10	-.14	-.03	-.01	.01	.04
Lack of Relationship Exclusivity	.04	-.01	-.24***	-.21***	-.25***	-.32***	.08	.01	-.01	-.04
<u>Worldwide Sample</u>										
Short-Term Mating Interests	.09***	.08***	-.13***	-.08***	-.14***	-.13***	-.01	.01	.03*	.11***
Unrestricted Sociosexual Orientation	.16***	.14***	-.12***	-.14***	-.04***	-.11***	-.04**	-.01	.08***	.12***
Mate Poaching Attempts	.15***	.10***	-.11***	-.12***	-.05***	-.08***	.01	.03*	.05***	.04***
Succumbed to Poaching	.07***	.04***	-.08***	-.09***	-.09***	-.12***	.03	.06***	.02	.03**
Lack of Relationship Exclusivity	.10***	.07***	-.21***	-.19***	-.19***	-.20***	.03	.04**	.01	.02

Note: M = Men, W = Women. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ . Reported are partial correlations controlling for the effects of nation within regions.

Table 4

Nation-Level Personality Traits Related to Nation-Level Short-Term Mating among Men and Women across 46 Nations of the International Sexuality Description Project

National Short-Term Mating	National Personality Traits									
	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness	
	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>	<u>M</u>	<u>W</u>
Short-Term Mating Interests										
Men	.19	.39**	-.38**	-.16	-.28*	-.12	-.02	.23	.32*	.44***
Women	.18	.45***	-.19	.02	-.12	.02	-.15	-.06	.17	.35**
Unrestricted Sociosexual Orientation										
Men	.38**	.47***	-.03	.11	.15	.24*	-.44***	-.13	.29*	.41**
Women	.27*	.51***	-.11	.01	.06	.14	-.38**	-.28*	.15	.30*
Mate Poaching Attempts										
Men	.34**	.35**	.01	.13	.12	.24*	-.20	-.06	.09	.29*
Women	.39**	.37**	-.09	-.04	.14	.17	-.30*	-.23	-.02	.07
Succumbed to Poaching										
Men	.20	.13	-.24*	-.30*	-.12	-.06	.09	.18	-.06	.05
Women	.19	.18	-.12	-.10	-.12	-.12	-.08	-.11	-.11	.03
Lack of Relationship Exclusivity										
Men	.15	.13	-.15	-.14	-.20	-.25*	.22	.31*	-.18	-.20
Women	.32*	.04	.18	.18	.20	.14	-.07	.00	-.09	-.08

Note: M = Men, W = Women. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ .

Figure Captions

*Figure 1.* Personality traits as predictive of short-term mating interests in the International Sexuality Description Project.

*Figure 2.* Personality risk level related to short-term mating interests in the International Sexuality Description Project.

*Figure 3.* National levels of women's extraversion related to national levels of women's sociosexuality across 46 nations of the International Sexuality Description Project,  $r(44) = .51, p < .001$ .

*Figure 4.* National levels of men's agreeableness related to national levels of men's short-term mating interests across 46 nations of the International Sexuality Description Project,  $r(44) = -.38, p < .01$ .

*Figure 5.* National levels of men's neuroticism related to national levels of men's sociosexuality across 46 nations of the International Sexuality Description Project,  $r(44) = -.44, p < .001$ .











