

**PATTERNS AND UNIVERSALS OF ADULT ROMANTIC  
ATTACHMENT ACROSS 62 CULTURAL REGIONS  
Are Models of Self and of Other Pancultural Constructs?**

- DAVID P. SCHMITT  
*Bradley University*
- LIDIA ALCALAY  
*Pontificia Universidad Católica de Chile, Chile*
- MELISSA ALLENSWORTH  
*Bradley University*
- JÜRI ALLIK  
*University of Tartu, Estonia*
- LARA AULT  
*University of Louisville*
- IVARS AUSTERS  
*University of Latvia, Latvia*
- KEVIN L. BENNETT  
*University of New Mexico*
- GABRIEL BIANCHI  
*Slovak Academy of Sciences, Slovak Republic*
- FREDRICK BOHOLST  
*University of San Carlos, Philippines*
- MARY ANN BORG CUNEN  
*University of Malta, Malta*
- JOHAN BRAECKMAN  
*Ghent University, Belgium*
- EDWIN G. BRAINERD JR.  
*Clemson University*
- LEO GERARD A. CARAL  
*University of San Carlos, Philippines*
- GABRIELLE CARON  
*Université de Laval, Canada*
- MARIA MARTINA CASULLO  
*University of Buenos Aires, Argentina*
- MICHAEL CUNNINGHAM  
*University of Louisville*
- IKUO DAIBO  
*Osaka University, Japan*
- CHARLOTTE DE BACKER  
*Ghent University, Belgium*
- EROS DE SOUZA  
*Illinois State University*
- ROLANDO DIAZ-LOVING  
*National Autonomous University of Mexico, Mexico*
- GLÁUCIA DINIZ  
*University of Brasilia, Brazil*
- KEVIN DURKIN  
*The University of Western Australia, Australia*
- MARCELA ECHEGARAY  
*University of Lima, Peru*
- EKIN EREMISOY  
*Bogaziçi Üniversitesi, Turkey*
- HARALD A. EULER  
*University of Kassel, Germany*
- RUTH FALZON  
*University of Malta, Malta*
- MARYANNE L. FISHER  
*York University, Canada*
- DOLORES FOLEY  
*University of Queensland, Australia*
- ROBERT FOWLER  
*Bradley University*
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*Åbo Akademi University, Finland*
- SIRPA FRY  
*Åbo Akademi University, Finland*
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*Al-Akhawayn University, Morocco*
- VIJAI N. GIRI  
*Indian Institute of Technology, Kharagpur, India*
- DEBRA L. GOLDEN  
*University of Hawaii, Manoa*
- KARL GRAMMER  
*Ludwig-Boltzmann-Institute for Urban Ethology, Austria*
- LIRIA GRIMALDI  
*University of Catania, Italy*
- JAMIN HALBERSTADT  
*University of Otago, New Zealand*
- SHAMSUL HAQUE  
*University of Dhaka, Bangladesh*
- DORA HERRERA  
*University of Lima, Peru*

- JANINE HERTEL  
*Technische Universität Chemnitz, Germany*
- AMANDA HITCHHELL  
*Bradley University*
- HEATHER HOFFMANN  
*Knox College*
- DANICA HOOPER  
*University of Queensland, Australia*
- ZUZANA HRADILEKOVA  
*Comenius University, Slovak Republic*
- JASNA HUDEK-KENE-EVI  
*University of Rijeka, Croatia*
- ALLEN HUFFCUTT  
*Bradley University*
- JAS JAAFAR  
*University of Malaya, Malaysia*
- MARGARITA JANKAUSKAITE  
*Vilnius University, Lithuania*
- HEIDI KABANGU-STAHEL  
*Centre d'Enseignement les Gazelles, Democratic Republic of the Congo*
- IGOR KARDUM  
*University of Rijeka, Croatia*
- BRIGITTE KHOURY  
*American University of Beirut, Lebanon*
- HAYRRAN KWON  
*Kwangju Health College, South Korea*
- KAIA LAIDRA  
*University of Tartu, Estonia*
- ANTON-RUPERT LAIREITER  
*Institute of Psychology, University of Salzburg, Austria*
- DUSTIN LAKERVELD  
*University of Utrecht, the Netherlands*
- ADA LAMPERT  
*The Ruppin Institute, Israel*
- MARYANNE LAURI  
*University of Malta, Malta*
- MARGUERITE LAVALLÉE  
*Université de Laval, Canada*
- SUK-JAE LEE  
*National Computerization Agency, South Korea*
- LUK CHUNG LEUNG  
*City University of Hong Kong, Hong Kong*
- KENNETH D. LOCKE  
*University of Idaho*
- VANCE LOCKE  
*The University of Western Australia, Australia*
- IVAN LUKSIK  
*Slovak Academy of Sciences, Slovak Republic*
- ISHMAEL MAGAISA  
*University of Zimbabwe, Zimbabwe*
- DALIA MARCINKEVICIENE  
*Vilnius University, Lithuania*
- ANDRÉ MATA  
*University of Lisbon, Portugal*
- RUI MATA  
*University of Lisbon, Portugal*
- BARRY MCCARTHY  
*University of Central Lancashire, England*
- MICHAEL E. MILLS  
*Loyola Marymount University*
- NHLANHLA J. MKHIZE  
*University of Natal, South Africa*
- JOÃO MOREIRA  
*University of Lisbon, Portugal*
- SÉRGIO MOREIRA  
*University of Lisbon, Portugal*
- MIGUEL MOYA  
*University of Granada, Spain*
- M. MUNYAE  
*University of Botswana, Botswana*
- PATRICIA NOLLER  
*University of Queensland, Australia*
- HMOUD OLIMAT  
*University of Jordan, Jordan*
- ADRIAN OPRE  
*Babes Bolyai University, Romania*
- ALEXIA PANAYIOTOU  
*University of Cyprus, Cyprus*
- NEBOJSA PETROVIC  
*University of Belgrade, Serbia*
- KAROLIEN POELS  
*Ghent University, Belgium*
- MIROSLAV POPPER  
*Slovak Academy of Sciences, Slovak Republic*
- MARIA POULIMENOU  
*KPMG Kyriacou Counsultants SA, Greece*
- VOLODYMYR P'YATOKHA  
*Volyn Regional Hospital, Ukraine*
- MICHEL RAYMOND  
*Université de Montpellier II, France*
- ULF-DIETRICH REIPS  
*Universität Zürich, Switzerland*

- SUSAN E. RENEAU  
*University of Alabama*
- SOFIA RIVERA-ARAGON  
*National Autonomous University of Mexico, Mexico*
- WADE C. ROWATT  
*Baylor University*
- WILLIBALD RUCH  
*Queens University Belfast, Northern Ireland*
- VELKO S. RUS  
*Univeristy of Ljubljana, Slovenia*
- MARILYN P. SAFIR  
*University of Haifa, Israel*
- SONIA SALAS  
*Universidad de La Serena, Chile*
- FABIO SAMBATARO  
*University of Catania, Italy*
- KENNETH N. SANDNABBA  
*Åbo Akademi University, Finland*
- RACHEL SCHLEETER  
*Bradley University*
- MARION K. SCHULMEYER  
*Universidad Privada de Santa Cruz de la Sierra,  
Bolivia*
- ASTRID SCHÜTZ  
*Technische Universität Chemnitz, Germany*
- TULLIO SCRIMALI  
*University of Catania, Italy*
- TODD K. SHACKELFORD  
*Florida Atlantic University*
- MITHILA B. SHARAN  
*Indian Institute of Technology, Kharagpur, India*
- PHILLIP R. SHAVER  
*University of California, Davis*
- FRANCIS SICHONA  
*University of Dar es Salaam, Tanzania*
- FRANCO SIMONETTI  
*Pontificia Universidad Católica de Chile, Chile*
- TILAHUN SINESHAW  
*Ramapo College of New Jersey*
- R. SOOKDEW  
*University of Natal, South Africa*
- TOM SPEELMAN  
*Ghent University, Belgium*
- SPYROS SPYROU  
*Cyprus College, Cyprus*
- H. CANAN SÜMER  
NEBI SÜMER  
*Middle East Technical University, Turkey*
- MARIANNA SUPEKOVA  
*Slovak Academy of Sciences, Slovak Republic*
- TOMASZ SZLENDAK  
*Nicholas Copernicus University, Poland*
- ROBIN TAYLOR  
*University of the South Pacific, Fiji*
- BERT TIMMERMANS  
*Vrije Universiteit, Belgium*
- WILLIAM TOOKE  
*State University of New York, Plattsburgh*
- IOANNIS TSAOUSIS  
*University of the Aegean, Greece*
- F.S.K. TUNGARAZA  
*University of Dar es Salaam, Tanzania*
- ASHLEY TURNER  
*Bradley University*
- GRIET VANDERMASSE  
*Ghent University, Belgium*
- TIM VANHOOMISSEN  
FRANK VAN OVERWALLE  
*Vrije Universiteit Brussel, Belgium*
- INE VANWESENBEECK  
*The Netherlands Institute of Social Sexological Re-  
search, the Netherlands*
- PAUL L. VASEY  
*University of Lethbridge, Canada*
- JOÃO VERISSIMO  
*University of Lisbon, Portugal*
- MARTIN VORACEK  
*University of Vienna Medical School, Austria*
- WENDY W.N. WAN  
*University of Hong Kong, Hong Kong*
- TA-WEI WANG  
*Yuan Ze University, Taiwan*
- PETER WEISS  
*Charles University, Czech Republic*
- ANDIK WIJAYA  
*Couple Clinic Indonesia, Surabaya, Indonesia*
- LIESBETH WOERTMAN  
*Utrecht University, the Netherlands*
- GAHYUN YOUN  
*Chonnam National University, South Korea*
- AGATA ZUPANÈIÈ  
*University of Ljubljana, Slovenia*

As part of the International Sexuality Description Project, a total of 17,804 participants from 62 cultural regions completed the Relationship Questionnaire (RQ), a self-report measure of adult romantic attachment. Correlational analyses within each culture suggested that the Model of Self and the Model of Other scales of the RQ were psychometrically valid within most cultures. Contrary to expectations, the Model of Self and Model of Other dimensions of the RQ did not underlie the four-category model of attachment in the same way across all cultures. Analyses of specific attachment styles revealed that secure romantic attachment was normative in 79% of cultures and that preoccupied romantic attachment was particularly prevalent in East Asian cultures. Finally, the romantic attachment profiles of individual nations were correlated with sociocultural indicators in ways that supported evolutionary theories of romantic attachment and basic human mating strategies.

**Keywords:** romantic attachment; culture; internal working models; human mating strategies

**In this article,** we report findings from the International Sexuality Description Project (ISDP), a research collaboration involving more than 100 social, behavioral, and biological scientists. The ISDP was conducted with the express aim of obtaining direct assessments of sexuality from a wide range of cultures. As part of the project, more than 17,000 participants from 62 cultural regions completed a brief self-report measure of adult romantic attachment called the Relationship Questionnaire (Bartholomew & Horowitz, 1991). Five specific objectives motivated our investigation into adult romantic attachment and its variation across cultures.

The first objective was to determine whether the Model of Self and Model of Other attachment scales of the Relationship Questionnaire were valid within all cultures of the ISDP. The second objective was to evaluate whether these two basic dimensions underlie the four categorical styles of romantic attachment—secure, dismissing, preoccupied, and fearful (see Bartholomew, 1990)—in the same way across all ISDP cultures. The third objective was to determine whether the secure form of romantic attachment is normative across all ISDP cultures (van IJzendoorn & Sagi, 1999). The fourth objective was to investigate whether East Asians are particularly prone to preoccupied romantic attachment (Soon & Malley-Morrison, 2000). Our fifth and final objective was to test various evolutionary theories of romantic attachment and basic human mating strategies (Belsky, Steinberg, & Draper, 1991; Chisholm, 1996). Because research on adult romantic attachment has been greatly influenced by developmental theories of attachment (see Cassidy & Shaver, 1999; Simpson & Rholes, 1998), we begin with a brief review of the developmental origins of attachment.

#### DEVELOPMENTAL ORIGINS OF ATTACHMENT

According to Bowlby's (1969/1982) ethological theory of attachment, humans possess a behavioral-motivational system that emerges in infancy and is designed to protect children as they pass through several discrete phases of development (Marvin & Britner, 1999). This attachment system is thought to be shared with other primates (Suomi, 1995), having evolved as an adaptive mechanism for monitoring the physical proximity and availability of

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protective attachment figures (Bretherton & Munholland, 1999). A central feature of this theory is that all children are presumed to pass through the same set of developmental phases and to possess the same highly evolved attachment system (van IJzendoorn & Sagi, 1999). It also is generally assumed that successful navigation through the universal stages of attachment normatively provides children with a secure emotional base, a base from which children can competently lead the rest of their relational lives (Bowlby, 1988; Hazan & Zeifman, 1999).

Early attachment experiences provide a secure emotional base primarily by impacting children's fundamental feelings of confidence, worthiness, and interpersonal trust (Bowlby, 1973, 1980). Childhood experiences that include responsive, supportive, and consistent caregiving are thought to leave children with an abiding sense of high self-worth and a lasting feeling of comfort about depending on others. These thoughts and feelings eventually crystallize into basic internal working models or cognitive-emotional attitudes that securely assert that the self is valuable and worthy of love (i.e., children develop a positive model-of-self attitude) and that others are valuable and worthy of trust (i.e., children develop a positive model-of-other attitude). Unresponsive, abusive, or inconsistent caregiving experiences, in contrast, are thought to leave children with negative or dysfunctional internal working models. Dysfunctional models can consist of a negative model of other (via distrust and low valuing of the parent), a negative model of self (via low self-esteem and sensitivity to rejection), or negative models of both the self and others (Bartholomew, 1990). Eventually, these internal working models can unknowingly become stable parts of the child's core personality: "Once built, evidence suggests, these models of a parent and self in interaction tend to persist and are so taken for granted that they come to operate at an unconscious level" (Bowlby, 1988, p. 130).

#### EVIDENCE OF ATTACHMENT IN CHILDHOOD AND BEYOND

Beginning with the work of Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978), developmental psychologists have consistently found that early childhood attachment experiences are closely connected with children's feelings toward themselves and others. In support of Bowlby's original theory (1969/1982), children from supportive caregiving environments have higher self-esteem and are more trusting, kind, and generally more prosocial than other children (see Ainsworth, 1991). Although this research often portrays humans as having discrete attachment styles in which one is either securely or insecurely attached, attachment orientations also can be understood in terms of variation along the fundamental dimensions of Model of Self and Model of Other (Brennan, Clark, & Shaver, 1998; Griffin & Bartholomew, 1994a). In children, individual differences in Model of Self and Model of Other have been linked to a wide range of emotional and social outcomes (Bretherton & Munholland, 1999), and attachment orientations rooted in positive Models of Self and Other are thought to provide the healthiest foundation for psychological functioning (Dozier, Stovall, & Albus, 1999; Greenberg, 1999).

Evidence also suggests that internal working Models of Self and Other tend to persist over time, affecting our ability to relate to others in close personal relationships well into adulthood (Simpson & Rholes, 1998; Waters, Merrick, Treboux, Crowell, & Albertstein, 2000). Attachment style categories, and the underlying internal working Models of Self and Other, seem to have an enduring influence on many social interactions (Collins & Read, 1994; Pietromonaco & Barrett, 1997), including parent-child relations (George & Solomon, 1999), peer relationships and friendships (Allen & Land, 1999; Feeney, Noller, & Patty,

1993), teacher-student dynamics (Sroufe, 1983), therapeutic interactions (Slade, 1999), and even the way people form close relationships with God (Kirkpatrick, 1999).

#### **INTERNAL WORKING MODELS AND ADULT ROMANTIC ATTACHMENT**

In the mid-1980s, researchers began to investigate how attachment styles and orientations might apply to people's cognitive-emotional attitudes toward romantic love and sexual relationships (Hazan & Shaver, 1987). During the last decade and a half, a growing body of evidence has shown that attachment orientations deeply influence the way people think and feel about their romantic relationships (Feeney & Noller, 1996; Klohnen & John, 1998). Variation in adult attachment orientation has been linked to patterns of romantic relationship conflict and stress (Rholes, Simpson, & Stevens, 1998; Simpson, 1990), romantic satisfaction and harmony (Brennan & Shaver, 1995; Collins & Read, 1990; Roberts & Noller, 1998), as well as the temporal duration of romantic relationships (Hazan & Zeifman, 1999; Kirkpatrick, 1998; Simpson, 1999). In general, people with so-called secure attachment styles tend to experience less conflict, more satisfaction, greater stability, and longer duration in their romantic relationships (Belsky, 1999; Kirkpatrick & Hazan, 1994). From the perspective of internal working models, the reason behind this pattern is that secure individuals—those with more positive Models of Self and Other—have higher self-worth, are less sensitive to rejection, value others more highly, and are more comfortable depending on others (Brennan et al., 1998; Griffin & Bartholomew, 1994a).

According to the two-factor model of romantic attachment proposed by Bartholomew and Horowitz (1991), internal working Models of Self and Other are actually independent dimensions that, in combination, form four basic categories or styles of adult romantic attachment (see also Bartholomew, 1990). The differing combinations of Model of Self and Other yield four distinct attitudes toward romantic relationships. People who possess a positive Model of Self and a positive Model of Other, for example, are designated as having a secure romantic attachment style. Secure individuals have a sense of lovability about themselves, a sense that they are worthy of attention from others. Secure individuals also possess an expectation that other people will be accepting and responsive to their expressions of love. Based on Bartholomew and Horowitz's model, these feelings are thought to be generated by unconscious cognitive-emotional attitudes represented internally as a positive Model of Self and a positive Model of Other.

Dismissing individuals also maintain a positive Model of Self, along with a negative Model of Other. This combination of internal working models leads dismissing individuals to experience high self-esteem, but they tend to protect themselves against romantic disappointment by avoiding close relationships and maintaining a sense of independence and invulnerability. Preoccupied individuals possess a negative Model of Self and a positive Model of Other. Those with preoccupied tendencies are inclined to continually strive for self-acceptance by gaining the romantic approval of highly valued others. Fearful individuals have a negative Model of Self and a negative Model of Other. Fearful individuals tend to avoid loving relationships altogether because they view themselves as unworthy of love, they see the love of others as largely unavailable, and they come to expect romantic rejection from their relationship partners (Bartholomew & Horowitz, 1991).

The basic two-dimension, four-category model presented by Bartholomew and Horowitz (1991) can be integrated with other models of adult romantic attachment (Bartholomew & Shaver, 1998; Griffin & Bartholomew, 1994b) and has received a good deal of support from

subsequent attachment literature (Brennan et al., 1998; Carver, 1997; Feeney, 1999). However, the initial validation research of their model of romantic attachment was based on relatively small sample sizes ( $n = 77$ ,  $n = 69$ ; Bartholomew & Horowitz, 1991), and follow-up studies of their model have been largely limited to Western cultures (Bartholomew, 1994; Bartholomew & Shaver, 1998; Scharfe & Bartholomew, 1994).

Even though many attachment researchers regard the key developmental processes of attachment—the processes that give rise to internal working Models of Self and Other—as universal across all human cultures (Main, 1990; van IJzendoorn & Sagi, 1999), some have argued that the core assumptions of attachment theory are biased toward Western ways of thinking. For example, Rothbaum and his colleagues recently questioned whether the secure base of attachment universally fosters adaptation through exploration and individuation (Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). Indeed, many cultural differences have previously been implicated as moderators of childhood attachment behaviors (Ainsworth & Marvin, 1995). Because the two-dimension, four-category model of romantic attachment has not been widely examined in non-Western cultures (Sümer & Güngör, 1999), it remains unclear whether this model of romantic attachment is a universal feature of human psychology or whether it differs in important ways across diverse human cultural forms.

#### RATIONALE FOR THE PRESENT STUDY

In the current study, we explored the psychology of adult romantic attachment across 62 cultural regions to accomplish five primary objectives:

*Objective 1: Determine whether Model of Self and Model of Other scales are valid within all ISDP cultures.* Given the crucial role that culture can play in childhood development (Gardner & Kosmitzki, 2002), in attitudes toward the self and other (Markus & Kitayama, 1991), and in romantic relationship dynamics (Hatfield & Rapson, 1996), it seems likely that internal working models of romantic attachment (Bartholomew, 1990; Bartholomew & Horowitz, 1991) may be at least partly influenced or moderated by culture. It remains unknown, however, whether Models of Self and Other can be accurately assessed across diverse cultural forms. This is because very few studies have simultaneously looked at romantic attachment styles across more than two cultures (Doherty, Hatfield, Thompson, & Choo, 1994; Sprecher et al., 1994), and to our knowledge, no study has examined the two-factor view of romantic attachment—based on Models of Self and Other—across multiple non-Western cultures. A primary objective of the ISDP was to fill this important knowledge gap.

For example, if the internal working Model of Self represents feelings and attitudes toward the self across all cultures (including whether the self is lovable and worthy of attention; Bowlby, 1988), then, within each culture of the ISDP, the Model of Self scale should positively correlate with measures of self-worth (e.g., self-esteem). This general relationship was originally documented by Bartholomew and Horowitz (1991) across the four categories of attachment, and if verified across the ISDP cultural regions, this would provide compelling evidence for the universality of the Model of Self construct. Moreover, Model of Self scores should be largely unrelated to measures that are unassociated with self-worth. This would provide cross-cultural evidence of the discriminant validity of the Model of Self construct. Similarly, if the Model of Other scale theoretically represents feelings and attitudes toward others (including whether others are valuable, dependable, and worthy of love), then, within each culture, scores on the Model of Other scale should positively correlate with

measures of prosociality (e.g., agreeableness as measured by the Big Five Inventory; Benet-Martinez & John, 1998). Model of Other scores also should be unrelated to measures unassociated with prosociality, such as self-esteem (Rosenberg, 1965).

*Objective 2: Determine whether Model of Self and Model of Other dimensions underlie various romantic attachment styles in the same way across all ISDP cultures.* At present, it is unclear whether the internal working models that seem to function as basic structures in childhood attachment (Bretherton & Munholland, 1999) exist as a two-dimensional foundation of adult romantic attachment categories as well. If the underlying psychology of specific attachment styles does fluctuate across cultures, this may have important implications for our understanding of romantic relationship processes and outcomes (Rholes et al., 1998; Schmitt, 2002). Cultural variations in the basic nature of attachment psychology may also have applications in treating attachment-related disorders (Slade, 1999).

*Objective 3: Determine whether the secure form of romantic is normative across all ISDP cultures.* Previous research has suggested that secure attachments may be the most common form of parent-child attachment across cultures (van IJzendoorn & Sagi, 1999). The idea that most children develop secure attachment styles has been called the *normativity hypothesis*, and it is a core assumption of attachment theory (though see Rothbaum et al., 2000). Empirically, it does appear that secure parent-child attachment is the most prevalent form in Westernized cultures (Ainsworth, 1991), and several studies have documented the preponderance of secure parent-child attachment in non-Western cultures, including in Uganda (57% of children studied were classified as secure), China (68%), and Japan (68%) (see van IJzendoorn & Sagi, 1999). A logical implication of the normativity hypothesis, combined with the presumption that attachment styles are reasonably stable over time (Bowlby, 1988; Waters et al., 2000), is that the secure form of adult romantic attachment should be the most common form of adult romantic attachment across all cultures.

*Objective 4: Determine whether East Asians score particularly high on preoccupied romantic attachment.* Markus and Kitayama (1991) have argued that Japanese individuals tend to evaluate the self primarily in terms of whether others collectively value the self (see also Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). This has led to the hypothesis that East Asian individuals would be particularly prone to preoccupied romantic attachments, given that they may strive for self-acceptance by gaining the romantic approval of highly valued others (e.g., Soon & Malley-Morrison, 2000).

*Objective 5: Determine whether individuals from cultures with greater resources, fewer social stressors, and lower fertility rates possess more secure attachment orientations.* According to Belsky et al. (1991), early social experiences adaptively channel children down one of two reproductive pathways. Those people who are socially exposed to high levels of stress—especially insensitive or inconsistent parenting, harsh physical environments, and economic hardship—tend to develop insecure romantic attachment styles that are associated with short-term reproductive strategies (see also Kirkpatrick, 1998; Schmitt, 2003). Individuals from social contexts with lower stress, such as people from cultures with ample resources, should develop more secure romantic attachment styles that are associated with long-term reproductive strategies (Belsky, 1997). Chisholm (1996, 1999) has argued further that in cultures with fewer resources, the optimal mating strategy is to reproduce early and often, a strategy rooted in high fertility rates, insecure romantic attachments, and short-term



sexual relationships. In cultures that have abundant resources, the optimal strategy is to invest heavily in fewer numbers of offspring, a strategy associated with low fertility, secure romantic attachment, and monogamous mating behavior.

In addition to the aforementioned objectives, providing basic descriptive information on adult romantic attachment across the large number of ISDP cultures may be useful to future investigators. This is because existing cross-cultural reports of romantic attachment have been collected at varying points in time and because different measures of adult romantic attachment have fallen in and out of favor in the past decade (Bartholomew & Shaver, 1998), rendering archival cross-cultural comparisons somewhat problematic. If meaningful patterns and universals of romantic attachment do exist across cultures, the best method for detecting and clarifying these patterns would be to conduct a large study such as the ISDP in which primary data are simultaneously collected from all cultures using identical romantic attachment measures. Reporting romantic attachment levels across the 62 cultures of the ISDP may therein provide a unique quantitative benchmark for future investigators looking to relate romantic attachment patterns to other nation-level constructs of human sociality, psychology, and culture.

## METHOD

### SAMPLES

The research reported in this article is a result of the ISDP, a collaborative research effort that resulted in the sampling of 17,804 individuals (7,432 men and 10,372 women) representing 62 cultural regions from around the world (see Table 1). The nations and cultural regions in the ISDP are not fully independent cultures because many of the ISDP cultural regions share systems of learned behaviors and symbols (Nanda & Warms, 1998). Nonetheless, we considered it reasonable to investigate the patterns and trends evident across our cultural groupings as an exploratory step toward uncovering associations between culture and psychology. Because this is one of the first reports produced by the ISDP, we will provide here details on our sampling and assessment procedures.

Table 1 provides summary information about the cultural regions sampled in the ISDP. Most of this information is self-explanatory, so clarification is provided here only for selected regions. The cultural region of Canada-English consisted of three independent, English-speaking samples from the Canadian provinces of Ontario, Alberta, and British Columbia. The Canada-French cultural region was sampled from the province of Quebec and was administered the ISDP survey in French.

Thirteen independent samples from the United States were divided into five cultural regions, because (a) previous research has documented important psychological differences across cultural regions within the United States (e.g., Cohen, 1998), (b) these particular cultural regions are commonly employed when examining cultural effects within the United States (e.g., Laumann, Gagnon, Michael, & Michaels, 1994), and (c) we wanted to maintain similar sample sizes across all our cultural regions. The US-Northeast region consisted of one sample from the state of New York. The USA-Midwest region consisted of two samples from Illinois (i.e., one from a large public university and one from a small private college) and one sample from the Kentucky-Indiana border. The USA-South cultural region consisted of four samples, one each from South Carolina, Florida, Alabama, and Texas. The USA-West region consisted of samples from Idaho, New Mexico, and two samples from

California (one from Northern California and one from Southern California). The Southern California sample was administered the full ISDP survey over the Internet. The USA–Hawaii culture consisted of one sample from Hawaii, 75% of whom described themselves as Asian American or Native Hawaiian. Overall, the samples from the mainland United States consisted of 66% European American (non-Hispanic), 10% African American, 8% Hispanic American, 5% Asian American, 2% Native American, and 9% other or nondescriptive.

The placement of cultures into our three European regions (i.e., western, eastern, and southern) could be problematic because more than three regions exist in Europe, including northern, central, and other potential divisions. However, given the number and geography of nations included in the ISDP, we chose these three divisions to economize our presentation while maintaining the genuine regional variation across the European continent. The placement of Turkey in the Middle East region is also problematic in that Turkey could have been placed into Southeastern Europe, a Mediterranean, or a Southwestern Asia category. For comparative purposes, using our present groupings, we chose to place Turkey in the Middle East world region.

All of the African samples except the Democratic Republic of the Congo were administered the ISDP survey in English, and the Moroccan and Ethiopian samples' surveys contained annotated explanations for some of the most difficult words and phrases as identified in pretesting sessions. The sample from the Democratic Republic of the Congo was administered the ISDP survey in French. There were two samples from Australia, one from eastern Australia containing college students and one from western Australia that included college students and community members. The sample from Fiji was collected at the University of the South Pacific, a regional university. Although a large number of participants were from Fiji, a significant number came from surrounding nations within the Pacific Island region. Consequently, we will refer to this cultural region as the Fiji and Pacific Islands region. Although Taiwan and Hong Kong are both technically part of the nation of China, for statistical purposes, these two cultures were kept separate when conducting nation-level analyses.

Overall, this collection of cultural regions represents a diverse array of ethnic, geographic, and linguistic categories. In total, the 62 cultures of the ISDP represent 6 continents, 13 islands, 30 languages, and 56 nations. For some cultures (i.e., Australia, Austria, Canada-English, Chile, England, Germany, Israel, Malta, South Korea, Turkey, and the USA Midwest, South, and West regions), more than one sample was collected. For other cultures, more than one collaborator was involved in collecting the sample.

Most samples were comprised of college students (indicated in Table 1 under the Sample Type column by the words *college students* or *college*); some included general members of the community (indicated by *community sample* or *community*). All samples were convenience samples. Most samples were recruited as volunteers; some received course credit for participation, and others 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 and/or the use of a drop-box. Return rates for college student samples tended to be relatively high (around 95%), though this number was lower in some cultures. Return rates for community samples were around 50%. Not all participants received the full ISDP survey in samples from Chile, Jordan, South Africa, Fiji, India, and Bangladesh, though all samples received the measures used in this article. Further details on the sampling and assessment procedures within each of the 62 cultural regions are provided elsewhere (Schmitt et al., in press) and are available from the authors.

(text continues on p. 380)

TABLE 1  
**Sampling Methods, Sample Sizes, and Ages Across the 62  
 Cultural Regions of the International Sexuality Description Project**

<i>Cultural Regions</i>	<i>Sample Type</i>	<i>Incentive Type</i>	<i>Language</i>	<i>Sample Size</i>		<i>Age</i>				<i>t</i>	
				<i>n</i>	<i>n</i>	<i>Men</i>		<i>Women</i>			
						<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
North America											
Canada											
Canada-English	College students	Volunteer	English	313	553	21.8	5.2	21.3	4.8	1.48	
Canada-French	College students	Volunteer	French	60	113	28.0	9.2	28.0	9.0	0.01	
United States of America (USA)											
USA-Northeast	College students	Course credit	English	72	156	21.7	4.9	21.5	4.9	0.24	
USA-Midwest	College students	Volunteer, credit	English	184	357	21.6	4.4	20.8	4.8	1.86	
USA-South	College students	Course credit	English	368	570	20.7	4.7	21.4	5.3	-1.74	
USA-West	College students	Volunteer, credit	English	287	487	22.0	5.2	21.4	4.7	1.73	
USA-Hawaii	College students	Volunteer, credit	English	88	224	22.8	8.4	21.2	4.5	2.23*	
Mexico	Community sample	Volunteer	Spanish	106	109	24.2	5.2	24.4	7.2	-0.20	
South America											
Peru	College students	Volunteer	Spanish	106	100	22.4	3.7	21.3	2.2	2.46*	
Bolivia	College students	Volunteer	Spanish	92	89	22.2	1.7	22.1	2.2	0.06	
Chile <sup>a</sup>	College students	Volunteer	Spanish	100	212	20.8	2.1	20.4	3.4	1.10	
Argentina	College students	Volunteer	Spanish	110	136	22.7	3.5	22.5	3.2	0.37	
Brazil	College students	Volunteer	Portuguese	42	55	22.6	4.0	24.0	6.4	-1.21	
Western Europe											
Finland	Community sample	Volunteer	Finnish	24	90	37.8	13.3	38.1	11.9	-0.09	
United Kingdom (UK)											
UK-Northern Ireland	College students	Volunteer	English	56	244	21.1	6.3	19.9	4.1	1.84	
UK-England	College, community	Volunteer	English	82	101	28.1	10.2	25.7	8.6	1.75	
The Netherlands	College students	Volunteer	Dutch	115	126	21.4	3.4	21.5	3.6	-0.19	
Belgium (Flanders)	College students	Volunteer	Dutch-Flemish	166	356	19.3	2.1	18.5	1.4	4.59**	
France	College students	Volunteer	French	55	56	21.7	2.0	21.6	2.3	0.10	
Switzerland	College students	Volunteer	German	85	129	24.3	5.8	23.1	4.7	1.67	

(continued)

TABLE 1 (continued)

<i>Cultural Regions</i>	<i>Sample Type</i>	<i>Incentive Type</i>	<i>Language</i>	<i>Sample Size</i>		<i>Age</i>				<i>t</i>
				<i>Men</i>	<i>Women</i>	<i>Men</i>		<i>Women</i>		
						<i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
Germany	College, community	Volunteer, monetary	German	294	496	29.5	9.8	27.0	9.0	3.55**
Austria	College, community	Volunteer	German	207	260	26.7	6.8	26.4	7.6	0.49
<i>Eastern Europe</i>										
Estonia	College students	Volunteer	Estonian	79	109	21.5	3.7	23.1	7.0	-1.92
Latvia	College students	Volunteer	Latvian	90	103	20.0	2.5	19.3	0.9	2.68*
Lithuania	College students	Volunteer	Lithuanian	47	47	22.1	3.4	20.4	2.1	2.96*
Poland	College students	Volunteer	Polish	309	537	24.3	5.7	23.2	5.0	2.97*
Czech Republic	College students	Volunteer	Czech	106	129	25.1	6.8	25.6	8.5	-0.48
Slovakia	College students	Volunteer	Slovak	84	100	21.1	1.9	20.6	1.6	1.99
Ukraine	College, community	Volunteer	Ukrainian	100	100	25.0	4.6	27.4	6.8	-2.95*
Romania	College students	Course credit	Romanian	123	128	20.1	1.8	19.7	1.1	2.31
Serbia	College students	Volunteer	Serbian	100	100	22.4	2.3	21.0	2.3	4.20**
Croatia	College students	Volunteer	Croatian	113	109	20.5	1.9	21.2	1.7	-2.91*
Slovenia	College students	Volunteer	Slovenian	73	109	22.9	2.2	21.6	1.8	4.24**
<i>Southern Europe</i>										
Portugal	College, community	Volunteer, credit	Portuguese	110	142	22.1	4.5	20.7	2.7	2.94*
Spain	College students	Course credit	Spanish	95	178	21.3	3.0	20.7	3.1	1.59
Italy	College community	Volunteer	Italian	92	108	24.2	8.0	22.9	6.7	1.31
Malta	College students	Volunteer	English	133	198	20.9	4.5	20.7	5.3	0.42
Greece	College students	Volunteer	Greek	47	182	27.1	8.2	22.2	5.0	5.11**
Cyprus	College students	Volunteer	Greek	24	36	22.4	3.0	20.3	2.4	2.97**
<i>Middle East</i>										
Turkey	College students	Volunteer	Turkish	206	206	25.8	7.2	23.9	5.4	2.90*
Lebanon	College students	Volunteer	English	124	139	19.8	1.6	19.5	1.7	1.69
Israel	College students	Volunteer	Hebrew	180	214	28.2	7.1	24.1	4.5	6.90**
Jordan <sup>a</sup>	College students	Volunteer	Arabic	80	195	30.1	8.2	23.8	8.5	5.58**
Africa										
Morocco	College students	Volunteer	English <sup>b</sup>	93	89	20.4	1.9	20.0	1.7	1.23

Ethiopia	College, community	Volunteer	English <sup>b</sup>	140	100	32.8	7.9	27.4	5.9	5.60**
United Republic of Tanzania	College students	Volunteer	English <sup>b</sup>	93	43	27.8	4.5	26.5	4.4	1.46
Democratic Republic of the Congo	College, community	Volunteer	French	126	66	32.3	9.0	30.6	10.5	1.14
Zimbabwe	College students	Volunteer	English	100	100	20.8	2.8	20.0	2.1	2.44
Botswana	College students	Volunteer	English	97	116	22.0	4.7	21.2	4.4	1.30
South Africa <sup>a</sup>	College students	Volunteer	English	81	81	21.7	2.0	20.9	1.6	2.68*
Oceania										
Australia	College students	Volunteer, credit	English	201	288	22.0	6.3	20.9	5.3	2.15
New Zealand	College students	Volunteer, monetary	English	116	158	20.9	4.6	19.4	2.5	3.41**
Fiji and Pacific Islands <sup>a</sup>	College, community	Volunteer	English <sup>b</sup>	81	82	23.7	6.0	23.9	6.1	-0.15
South and Southeast Asia										
India <sup>a</sup>	College students	Volunteer	Hindi	100	100	21.1	1.7	22.5	3.1	-3.91**
Bangladesh <sup>a</sup>	College students	Volunteer	Bangla	83	62	21.9	1.3	21.5	1.2	2.34
Malaysia	College students	Volunteer	Malay	50	91	23.1	1.1	23.2	3.1	-0.12
Indonesia	College students	Volunteer	Indonesian	55	56	28.9	7.5	29.5	6.1	-0.42
Philippines	College students	Volunteer	English <sup>b</sup>	121	161	19.8	1.5	19.4	1.7	2.37
East Asia										
Hong Kong (China)	College students	Volunteer	English <sup>b</sup>	100	101	20.3	1.3	20.4	1.0	-0.70
Taiwan	College students	Volunteer	Mandarin	116	93	21.4	1.6	21.3	1.2	0.44
South Korea	College students	Volunteer	Korean	195	295	21.4	2.6	19.8	1.7	8.29**
Japan	College students	Volunteer	Japanese	157	102	19.8	1.8	19.5	2.0	1.40
Worldwide sample	Varied	Varied	30 Languages	7,432	10,372	23.2	6.3	22.3	5.8	10.67**

NOTE: Most samples consisted of college students (indicated above in the Sample Type column by the words *college students* or *college*); some included general members of the community (indicated by *community, sample* or *community*). All samples were convenience samples. Most samples were recruited as volunteers (indicated in the Incentive Type column by *volunteer*); some received course credit for participation (indicated by *course credit* or *credit*), and others received a small monetary reward for their participation (indicated by *monetary*). All samples were administered anonymous self-report surveys; most surveys were returned via sealed envelope and/or the usage of a drop box. Return rates for college student samples tended to be relatively high (around 95%); return rates for community samples were lower (around 50%). Complete details on the sampling and assessment procedures within each of the 62 cultural regions are available from the authors.

a. = Not all participants received the full International Sexuality Description Project survey.

b. = English translation included annotations with explanations of difficult words and phrases.

\* $p < .01$ . \*\* $p < .001$ .

## PROCEDURE

All ISDP collaborators were asked to administer a nine-page survey to at least 100 men and 100 women. As seen in Table 1, most collaborators reached this approximate sample size of men and women. Participants were provided with a brief description of the study, including the information that their responses would be anonymous. The instructional set provided by each collaborator varied and was adapted to fit the specific culture and type of sample. Further details on incentives and cover stories are available from the authors. The survey took about 20 minutes to complete.

## MEASURES

*Translation procedures.* Researchers from cultural regions where English was not the primary language were asked to use a translation/back-translation process and to administer the ISDP survey in their native language. This procedure typically involved the primary collaborator translating the measures into the native language of the participants, and then having a second person back-translate the measures into English. Differences between the original English and the back-translation were discussed, and mutual agreements were made as to the most appropriate translation (Brislin, 1980). ISDP translators were not professionally trained translators, however, leaving open the question of translation quality. As seen in Table 1, the ISDP survey was translated into 30 different languages.

*Romantic attachment measure.* All samples were administered a two-dimension, four-category measure of adult romantic attachment called the Relationship Questionnaire (Bartholomew & Horowitz, 1991). This measure has one secure attachment item: "It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me." Participants use a 7-point Likert-type scale to rate the secure item, ranging from 1 (*doesn't describe me*) to 7 (*very accurately describes me*), with 4 as the midpoint of the scale. High scores on the secure scale indicate a participant possesses internal working models representing a positive Model of Self and a positive Model of Other.

The Relationship Questionnaire has three items that measure insecure romantic attachment styles. The first is the dismissing romantic attachment item: "I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me." High scores on the dismissing item indicate a positive Model of Self and a negative Model of Other. High scores on the preoccupied romantic attachment item—"I want to be completely emotionally intimate with others, but I find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them"—correspond to a negative Model of Self and a positive Model of Other. Finally, scoring high on the fearful romantic attachment item—"I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will get hurt if I allow myself to get too close to others"—indicates a negative Model of Self and a negative Model of Other.

An overall Model of Self scale can be created by adding together a participant's secure and dismissing scores and then subtracting the combination of preoccupied and fearful scores (see Griffin & Bartholomew, 1994a). The Model of Other scale is calculated by adding together the secure and preoccupied scores and then subtracting the combination of the

dismissing and fearful scores. Although the Relationship Questionnaire is not the most recent or advanced measure of romantic attachment, we used the Relationship Questionnaire because it is relatively brief, has been implemented in multiple studies, and because it has been described as useful for examining the relationship of internal working models to external cultural criteria (Bartholomew, 1994; Griffin & Bartholomew, 1994a). In addition, the Relationship Questionnaire is the only measure, among popular measures of attachment, to demonstrate independence from self-deceptive biases (Leak & Parsons, 2001).

*Self-esteem measure.* All participants were asked to complete a measure of global self-esteem, Rosenberg's Self-Esteem Scale (Rosenberg, 1965). This scale contains 10 counter-balanced 4-point items ranging from *strongly agree* to *strongly disagree*. The self-esteem scale is coded so that higher scores indicate higher levels of global self-esteem. This measure has been validated across several cultures (e.g., Pullmann & Allik, 2000), and it was expected that high scores on this measure would tend to relate positively to a participant's internal working Model of Self across all cultures. In this report, only those cultures in which the self-esteem scale had at least an appreciable level of internal reliability (i.e.,  $\alpha \geq .30$ ; see Robinson, Shaver, & Wrightsman, 1991) were used in analyses.

*Personality trait measure.* Participants were administered the BFI (Benet-Martinez & John, 1998). The BFI has been used effectively across cultures and languages (Benet-Martinez & John, 1998) and contains an agreeableness scale that may be related to the attachment Model of Other dimension as outlined by Bartholomew and Horowitz (1991). Many of the items of this scale are indicative of prosociality and positive attitudes toward others, including items that connote interpersonal trust (e.g., "I see myself as someone who is generally trusting"), kindness (e.g., "I see myself as someone who is considerate and kind to almost everyone"), and altruism (e.g., "I see myself as someone who is helpful and unselfish with others"). For further discussion of the links between agreeableness and prosocial behaviors, see Graziano and Eisenberg (1997). The agreeableness scale score is computed by taking the mean of nine counter-balanced items rated on a scale from 1 = *disagree strongly* to 5 = *agree strongly*, with 3 indicating *neither agree nor disagree*. High scores on the agreeableness scale indicated higher levels of prosociality. Only those cultures in which the scale had appreciable internal reliability (defined as alpha greater than .30) were used in analyses. It was expected that those who score high in prosociality would tend to have a more positive Model of Other. Participants were also asked to complete several measures not used in the present analyses.

*Sociocultural correlates of romantic attachment.* We obtained national fertility rate information from the United Nations Development Programme (2001) for 54 of our 56 nations (data were not available for Serbia or Taiwan). Other sociocultural variables of special interest included the Human Development Index (United Nations Development Programme, 2001), per capita GDP (United Nations Development Programme, 2001), and national profiles of individualism versus collectivism (Hofstede, 2001). Each of these variables was chosen because of its potential relationships with attachment, because of its utility in characterizing national cultures in previous research (e.g., Van de Vliert, Schwartz, Huisman, Hofstede, & Daan, 1999), and because the variables have been assessed in a sufficient number of cultures to make correlational analyses meaningful.

## RESULTS

In this article, we considered a feature of attachment psychology to be a true *cultural universal* if 100% of cultural regions possessed the attribute. For example, if an attachment scale significantly correlated with a personality scale in the same way across all cultures, we would regard this feature to be a cultural universal. Few features displayed this level of stability across all 62 cultural regions of the ISDP. Even so, there are several reasons why a culture may not display an association between variables in a given sample even though the relationship exists in all cultures (see Brown, 1991; Lonner, 1980). In addition, no cross-cultural study is free from sampling error, and in the current study, there was some degree of variability in methodology as well as numerous independent translations of the ISDP survey. Consequently, we used a range of terms to designate qualified levels of cultural universality.

We described an attribute as a *near universal* if more than 74% but less than 100% of cultural regions possessed the attribute. We also used the term *prevailing trend* to describe attributes displayed in more than 50% but less than 75% of the cultural regions of the ISDP. This depiction of cultural universality is derived from the work of Brown (1991), and readers may wish to consult Cronk (1999), Gaulin (1997), Lonner (1980), Tooby and Cosmides (1992), and Williams and Best (1990) for more information on the complexities of evaluating the cultural universality of psychological phenomena.

### OBJECTIVE 1: ARE THE MODEL OF SELF AND MODEL OF OTHER SCALES VALID WITHIN CULTURES?

We evaluated the construct validity of the Model of Self and Model of Other scales of the Relationship Questionnaire (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994a) by determining whether the scales correlated with external criteria in a consistent way within all cultures.

*Model of Self.* We first examined whether the Model of Self scale derived from the Relationship Questionnaire correlated with a self-esteem measure. The partial correlations between the Model of Self scale and Rosenberg's (1965) Self-Esteem Scale (controlling for age and gender) are listed down the first data column of Table 2. Correlations in Table 2 were corrected for attenuation within each sample because of the unreliability of the self-esteem scale (see Kaplan & Saccuzzo, 1993). In almost all cultural regions for which correlations could be computed (55 out of 60, or 92%), Model of Self scores positively correlated with self-esteem scores. This provided cross-cultural evidence for the near universal convergent validity of the Model of Self scale.

The second avenue for evaluating the construct validity of the Model of Self scale was to relate the scale to a measure that should be relatively unassociated with positive views of the self. One such scale is the agreeableness scale from the Big Five Inventory. Across the cultural regions of the ISDP, the Model of Self scale was statistically unrelated to agreeableness in 70% of cultures. This provided some cross-cultural evidence of the discriminant validity of the Model of Self scale. Overall, the Model of Self scale possessed substantial construct validity across cultures, supporting the hypothesis that an internal working Model of Self is a fundamental component of human psychology (Bowlby, 1988).

*Model of Other.* We evaluated the validity of the Model of Other scale by examining whether Model of Other scores correlated with a prosociality measure. The partial correla-



tions between Model of Other and BFI agreeableness (controlling for age and gender, and corrected for attenuation due to unreliability) are listed down the right side of Table 2. In a majority of cultural regions (75%), the Model of Other scale significantly correlated in a positive direction with agreeableness. This provided cross-cultural evidence for the convergent validity of the Model of Other scale, meeting our universality criterion of a near universal across cultures.

The second avenue for evaluating the validity of Model of Other scale was to relate it to a measure that is unassociated with positive views of others, such as self-esteem. As seen in Table 2, the Model of Other scale was statistically unrelated to the Self-Esteem Scale in 65% of cultures constituting the ISDP. This provided cross-cultural evidence of a prevailing trend supporting the discriminant validity of the Model of Other scale. Overall, the Model of Other scale possessed construct validity across most cultures, affirming the general proposition that an internal working Model of Other is a fundamental component of human psychology (Bowlby, 1988).

**OBJECTIVE 2: DO THE MODEL OF SELF AND MODEL OF OTHER DIMENSIONS UNDERLIE VARIOUS ROMANTIC ATTACHMENT STYLES IN THE SAME WAY ACROSS CULTURES?**

The second major objective of this study was to test the universality of the two-dimension, four-category model of romantic attachment postulated by Bartholomew and Horowitz (1991). According to this view of attachment, the Model of Self and Model of Other dimensions should be orthogonal constructs that independently underlie the various forms of secure and insecure romantic attachment in systematic ways.

*Models of Self and Other should not correlate.* The first avenue for testing the universality of the two-dimension, four-category model of romantic attachment was to correlate composite scores of Model of Self and Other within each of the 62 cultural regions. If the different categories of romantic attachment are to be considered combinations of two independent dimensions, then the two basic Model of Self and Model of Other scales should not significantly correlate with one another.

We found general support for the universality of orthogonal Model of Self and Model of Other dimensions. In 50 of 62 ISDP cultures (80%), the correlation between Model of Self and Other was nonsignificant. In 10 cultural regions (Canada-English, USA-Midwest, USA-West, USA-Hawaii, Northern Ireland, Germany, Serbia, Turkey, Israel, and Australia), the dimensions were positively correlated; in 2 cultural regions (Zimbabwe and the South Korea), the two dimensions were negatively correlated. In each case, however, these significant correlations were quite small in magnitude (around  $r = .16$ ). These findings are similar to those reported by Bartholomew and Horowitz (1991), and document a near universal feature of romantic attachment psychology—Models of Self and Other are independent constructs across most cultures.

*Secure attachment should be negatively correlated with fearful attachment.* If the four scales of the Relationship Questionnaire form a two-dimensional structure with independent dimensions of self and other, then the secure scale should negatively correlate with the fearful scale (Bartholomew & Horowitz, 1991). This is because secure romantic attachment contains a positive internal Model of Self and a positive internal Model of Other, whereas fearful romantic attachment contains precisely the opposite—a negative Model of Self and a nega-

**TABLE 2**  
**Models of Self and Other Related to Self-Esteem and Agreeableness**  
**(Controlling for Age and Gender) Across the 62 Cultural**  
**Regions of the International Sexuality Description Project**

<i>Cultural Regions</i>	<i>Model of Self</i>		<i>Model of Other</i>	
	<i>Self-Esteem</i>	<i>Agreeableness</i>	<i>Self-Esteem</i>	<i>Agreeableness</i>
North America				
Canada				
Canada-English	.42**	.22**	.15**	.27**
Canada-French	.53**	.36**	.04	.07
United States of America (USA)				
USA-Northeast	.38**	.13	.06	.30**
USA-Midwest	.50**	.18**	.12*	.32**
USA-South	.37**	.18**	.09	.28**
USA-West	.45**	.24**	.07	.32**
USA-Hawaii	.42**	.09	.14*	.15*
Mexico	.29**	.02	.07	.23**
South America				
Peru	.42**	.30**	.00	.14
Bolivia	.49*	.05	-.18*	.01
Chile	.40**	.28**	.14	.48**
Argentina	.32**	-.02	.01	.40**
Brazil	.22	-.01	.01	.04
Western Europe				
Finland	.61**	.06	.02	.47**
United Kingdom (UK)				
UK-Northern Ireland	.32**	.06	.14*	.31**
UK-England	.31**	.07	.11	.08
The Netherlands	.45**	.24**	.18*	.33**
Belgium	.34**	.11	.14*	.23**
France	.26*	-.12	.13	.21
Switzerland	.55**	.17*	.13	.29**
Germany	.44**	.12*	.11	.27**
Austria	.35**	.11	.23**	.32**
Eastern Europe				
Estonia	.44**	.05	.00	.32**
Latvia	.42**	.02	.07	.12
Lithuania	.30*	-.20	.01	.21
Poland	.35**	.04	.16**	.19**
Czech Republic	.40**	.13	.26**	.25**
Slovakia	.39**	.12	.18*	.35**
Ukraine	Low $\alpha$	Low $\alpha$	Low $\alpha$	Low $\alpha$
Romania	.30**	-.05	.23**	.39**
Serbia	.36**	.06	.25**	.20*
Croatia	.36**	.07	-.04	.16*
Slovenia	.28**	.18*	.14	.44**
Southern Europe				
Portugal	.35**	-.02	.00	.25**
Spain	.32**	.09	.07	.33**
Italy	.31**	.19*	.21*	.24**
Malta	.42**	.11	-.04	.13*
Greece	.32**	.11	.28**	.36**
Cyprus	.47**	.14	.35**	.36**

(continued)

TABLE 2 (continued)

Cultural Regions	Model of Self		Model of Other	
	Self-Esteem	Agreeableness	Self-Esteem	Agreeableness
Middle East				
Turkey	.47**	-.04	.15**	.19**
Lebanon	.35**	-.03	.00	.32**
Israel	.30**	.26**	.04	.42**
Jordan	-.22*	-.01	-.06	-.09
Africa				
Morocco	.17*	-.09	-.07	.16*
Ethiopia	-.04	-.01	-.10	.00
Tanzania	.41**	-.01	-.12	.10
Congo	.22**	.47**	-.03	.17*
Zimbabwe	.28**	.10	.16*	.09
Botswana	.26**	.14	.08	.18*
South Africa	Missing data	.07	Missing Data	.17*
Oceania				
Australia	.46**	.15*	.08	.20**
New Zealand	.42**	.26**	.36**	.24**
Fiji and Pacific Islands	.37**	.18	-.06	.06
South and Southeast Asia				
India	.36**	.01	-.16	.20*
Bangladesh	-.11	.11	.01	-.01
Malaysia	.29**	-.01	-.25**	.23*
Indonesia	.07	.54**	.10	.15
Philippines	.35**	.12	-.09	.14*
East Asia				
Hong Kong	.21*	.13	-.02	.23**
Taiwan	.39**	.34**	.01	.26**
South Korea	.24**	.00	.07	.54**
Japan	.32**	.01	.19*	.33**
Worldwide sample	.32**	.11**	.08**	.18**

NOTE: All correlation coefficients represent partial correlations controlling for age and gender and corrected for attenuation due to unreliability within each culture. *Low  $\alpha$*  indicates that a scale had inadequate internal reliability for meaningful correlations within a cultural sample; *Missing data* indicates that a measure was not included in a cultural sample's ISDP survey.

\* $p < .01$ . \*\* $p < .001$ .

tive Model of Other. Bartholomew and Horowitz (1991) originally reported a significant negative correlation between self-reported levels of secure and fearful romantic attachment,  $r(75) = -.55, p < .001$ .

We examined the correlation between secure and fearful romantic attachment, controlling for the effects of gender and age, within each of the 62 ISDP cultural regions. Although each cultural region was an independent sample with its own degrees of freedom, we conservatively set alpha at .01. This seemed reasonable given most of our sample sizes and the magnitude of the relationship between secure and fearful attachment found in previous studies (e.g., Bartholomew & Horowitz, 1991). Because these attachment scales were one-item measures, we were unable to correct each correlation for attenuation due to measurement unreliability (Kaplan & Saccuzzo, 1993). The correlations we report, therefore, should be considered conservative underestimates of the true correlations within each sample.

We found across 39 of 62 cultures (63%) that secure attachment was significantly correlated in the negative direction with fearful romantic attachment (see Table 3). Although every region from Canada and the United States displayed the expected pattern, the negative relationship between secure and fearful attachment only qualified as a prevailing trend across all ISDP cultural regions. The major exceptions to this trend occurred in all 7 samples from Africa, and most samples from both Asian regions failed to display the expected correlational pattern. In contrast, the predicted pattern was clearly evident, and reached the near universal level, in Western Europe (89%), North America (88%), Southern Europe (86%), and among the largely Westernized cultures of Australia and New Zealand.

It appeared that the predicted negative or bipolar secure versus fearful relationship was largely limited to Western cultures. It is possible that translation problems caused the lack of correlation among non-English-speaking samples. On the other hand, the magnitude of each correlation, even among English-speaking cultures, was less than that reported by Bartholomew and Horowitz (1991). Overall, this test provided partial support for the universality of the four-category model of romantic attachment.

*Preoccupied attachment should be negatively correlated with dismissing attachment.* If the four scales of the Relationship Questionnaire form a two-dimensional structure with orthogonal dimensions of self and other, then the preoccupied scale should negatively correlate with the dismissing scale. This is because preoccupied romantic attachment contains a negative Model of Self and a positive Model of Other, whereas dismissing romantic attachment contains a positive Model of Self and a negative Model of Other. Bartholomew and Horowitz (1991) reported a significant negative correlation between self-reported levels of preoccupied and dismissing romantic attachment,  $r(75) = -0.50, p < .001$ .

We found that only 25% of cultural regions showed the expected pattern (see Table 3). This failed to qualify the negative correlation of preoccupied romantic attachment with dismissing romantic attachment as any type of cultural universal. As with the secure-fearful correlation, evidence in favor of the four-category model appeared limited to Western cultures, especially the United States and Canada. One exception to this was the full support of the four-category model in Taiwan, Hong Kong, and India.

*Four attachment scales should form two dimensions.* A final way to evaluate the universality of the two-dimension, four-category model of attachment is to explore the internal factor structure of the Relationship Questionnaire across cultures. We used the factor analytic techniques reported by Bartholomew and Horowitz (1991) to explore the dimensionality of romantic attachment across the individual 62 cultures and 10 world regions of the ISDP. A principle components analysis using varimax rotation of the four attachment items revealed that, at both the individual culture level and the world-region level, two factors were appropriate for explaining variation among the romantic attachment scales. Across the 10 world regions, for example, two dimensions consistently emerged with eigen values above 1.0 and accounted for 64.8% of the variance in North America, 62.0% of the variance in South America, 65.3% of the variance in Western Europe, 61.1% of the variance in Eastern Europe, 63.1% of the variance in Southern Europe, 61.2% of the variance in the Middle East, 59.9% of the variance in Africa, 65.4% of the variance in Oceania, 58.1% of the variance in South and Southeast Asia, and 61.7% of the variance in East Asia. By this measure, the two-dimensional structure of romantic attachment is a true cultural universal.

This result should be interpreted with some caution, however, because the precise factor structure varied substantively across individual cultures and world regions. In North

**TABLE 3**  
**Intercorrelations of Romantic Attachment Scores**  
**(Controlling for Age and Gender) Across the 62 Cultural**  
**Regions of the International Sexuality Description Project**

<i>Cultural Regions</i>	<i>Attachment Styles Hypothesized to be Negatively Correlated</i>	
	<i>Secure and Fearful</i>	<i>Preoccupied and Dismissing</i>
North America		
Canada		
Canada-English	-.35**	-.17**
Canada-French	-.21*	-.10
United States of America (USA)		
USA-Northeast	-.28**	-.26**
USA-Midwest	-.38**	-.11*
USA-South	-.34**	-.19**
USA-West	-.39**	-.21**
USA-Hawaii	-.40**	-.11
Mexico	.02	.11
South America		
Peru	-.22*	-.04
Bolivia	.05	-.05
Chile	-.32**	-.10
Argentina	-.10	.03
Brazil	-.10	-.24
Western Europe		
Finland	-.08	.00
United Kingdom (UK)		
UK-Northern Ireland	-.34**	.00
UK-England	-.39**	-.25**
The Netherlands	-.38**	-.15*
Belgium	-.27**	-.14**
France	-.33**	-.22
Switzerland	-.34**	-.06
Germany	-.33**	-.04
Austria	-.23**	-.02
Eastern Europe		
Estonia	-.32**	-.16
Latvia	-.20*	-.12
Lithuania	-.21	-.06
Poland	-.27**	.02
Czech Republic	-.34**	-.02
Slovakia	-.28**	-.04
Ukraine	-.07	.04
Romania	-.24**	-.02
Serbia	-.38**	-.04
Croatia	-.09	-.14
Slovenia	-.31**	.09
Southern Europe		
Portugal	-.24**	-.14
Spain	-.17*	-.13
Italy	-.20*	-.06
Malta	-.26**	-.21*
Greece	-.26**	-.12
Cyprus	-.22	.05

(continued)

TABLE 3 (continued)

<i>Cultural Regions</i>	<i>Attachment Styles Hypothesized to be Negatively Correlated</i>	
	<i>Secure and Fearful</i>	<i>Preoccupied and Dismissing</i>
Middle East		
Turkey	-.35**	-.05
Lebanon	-.22**	-.10
Israel	-.29**	-.02
Jordan	-.03	.10
Africa		
Morocco	-.07	.10
Ethiopia	.02	.01
Tanzania	.12	.01
Congo	-.12	.11
Zimbabwe	.14	-.18*
Botswana	.07	.05
South Africa	-.05	-.06
Oceania		
Australia	-.39**	-.19**
New Zealand	-.38**	-.27**
Fiji and Pacific Islands	.01	-.17
South and Southeast Asia		
India	-.19*	-.21*
Bangladesh	.01	-.08
Malaysia	.26*	.10
Indonesia	.14	-.01
Philippines	-.01	-.06
East Asia		
Hong Kong	-.19*	-.18*
Taiwan	-.19*	-.19*
South Korea	.11	.01
Japan	-.13	-.12
Worldwide sample	-.22**	-.06**

NOTE: All correlation coefficients represent partial correlations controlling for age and gender within each culture.  
\* $p < .01$ . \*\* $p < .001$ .

America, Oceania, and South and Southeast Asia, the four romantic attachment scales formed the two-dimensional structure as postulated by Bartholomew and Horowitz (1991). On one component, secure attachment was the polar opposite of fearful attachment. On the other component, preoccupied attachment was the polar opposite of dismissing attachment. In addition, the secure and fearful attachment poles were unrelated or orthogonal to the preoccupied and dismissing attachment poles.

In South America, Western Europe, Eastern Europe, the Middle East, Africa, and East Asia, however, the dismissing attachment scale tended to move away from secure attachment and toward the fearful scale. The fearful scale also was positioned differently in these world regions, moving closer to the preoccupied scale. In other words, the three forms of insecure attachment coalesced slightly and formed a cluster of insecure attachment that contrasted with the secure scale (see also Sümer & Güngör, 1999). According to this test, the two-

dimension, four-category model of attachment postulated by Bartholomew and Horowitz (1991) lacked cultural universality.

**OBJECTIVE 3: IS THE SECURE FORM OF ROMANTIC ATTACHMENT NORMATIVE ACROSS CULTURES?**

According to the normativity hypothesis (van IJzendoorn & Sagi, 1999), the secure form of attachment is a normative feature of our species and so should be the most commonly observed romantic attachment orientation across cultures. Because the typological categorization of individuals using the Relationship Questionnaire is not advised, due, in part, to the frequency of so-called ties in categorization (Bartholomew & Horowitz, 1991), we were restricted to evaluating this hypothesis by comparing the mean levels of secure romantic attachment to the other three insecure attachment means.

Using this procedure, we found some support for the normativity hypothesis. As seen down the left side of Table 4, secure romantic attachment received the highest ratings in 79% (49 of 62) of ISDP cultural regions. Furthermore, when secure romantic attachment appeared lower than other forms of attachment, in most cultures these differences were nonsignificant. Some findings did run counter to the normativity hypothesis. Levels of dismissing romantic attachment were significantly higher than levels of secure romantic attachment in the cultural regions of Bolivia,  $t(178) = -2.81, p < .01$ ; Belgium,  $t(513) = -1.95, p < .05$ ; Ethiopia,  $t(230) = -7.81, p < .001$ ; and Malaysia,  $t(131) = -3.09, p < .01$ . Levels of preoccupied romantic attachment were significantly higher than levels of secure attachment in Ethiopia,  $t(226) = -3.34, p < .001$  and Japan,  $t(256) = -2.69, p < .01$ . Levels of fearful romantic attachment were significantly higher than levels of secure attachment in the cultures of Belgium,  $t(511) = -5.82, p < .001$ ; Ethiopia,  $t(224) = -2.68, p < .01$ ; and Indonesia,  $t(101) = -2.09, p < .05$ . Although our results do not provide the ideal test of the normativity hypothesis, our findings do indicate that the secure form of romantic attachment is normative in most, but not all, human cultures.

**OBJECTIVE 4: ARE EAST ASIANS PARTICULARLY HIGH ON PREOCCUPIED ROMANTIC ATTACHMENT?**

After controlling for age and gender in an ANCOVA with *world region* as the independent variable, we found a main effect of world region on preoccupied romantic attachment,  $F(9, 17,410) = 33.72, p < .001, \eta^2 = .02$ . Using Bonferroni's adjustment for multiple post hoc comparisons, we found that people from South and Southeast Asia ( $M = 3.98$ ) and East Asia ( $M = 3.95$ ) tended to have higher levels of preoccupied romantic attachment than others. This relationship seems to support the view that in many Asian cultures, validation (in this case romantic validation) is heavily dependent on the opinion of others (Markus & Kitayama, 1991). This relationship is also consistent with cultural variation in childhood attachment (van IJzendoorn & Sagi, 1999) and with previous studies comparing romantic attachment styles among East Asian and American cultures (e.g., Soon & Malley-Morrison, 2000).

Looking across individual countries, we found that preoccupied romantic attachment was associated with previously documented national characteristics in ways that support this interpretation. For example, after collapsing our 62 cultural regions down to 56 nations and comparing these nation-level romantic attachment scores to data previously reported on core cultural values in 49 nations (Hofstede, 2001), we found preoccupied romantic attachment

(text continues on p. 393)

TABLE 4  
**Romantic Attachment Profiles (Controlling for Age and Gender) Across  
the 62 Cultural Regions of the International Sexuality Description Project**

Cultural Region	Secure		Dismissing		Preoccupied		Fearful		Model of Self		Model of Other																																																																																																																																																																																																																																																																																																																																																																
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD																																																																																																																																																																																																																																																																																																																																																															
North America													Canada	4.56	1.53	3.89	1.61	3.28	1.71	3.65	1.91	1.52	3.70	0.31	3.89	Canada-English	4.23	1.55	3.57	1.79	3.07	1.87	3.36	1.89	1.35	3.91	0.34	3.73	Canada-French													United States of America (USA)													USA-Northeast	4.23	1.58	3.94	1.73	3.32	1.79	3.80	2.00	1.06	4.00	-0.19	4.00	USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99
Canada	4.56	1.53	3.89	1.61	3.28	1.71	3.65	1.91	1.52	3.70	0.31	3.89	Canada-English	4.23	1.55	3.57	1.79	3.07	1.87	3.36	1.89	1.35	3.91	0.34	3.73	Canada-French													United States of America (USA)													USA-Northeast	4.23	1.58	3.94	1.73	3.32	1.79	3.80	2.00	1.06	4.00	-0.19	4.00	USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99													
Canada-English	4.23	1.55	3.57	1.79	3.07	1.87	3.36	1.89	1.35	3.91	0.34	3.73	Canada-French													United States of America (USA)													USA-Northeast	4.23	1.58	3.94	1.73	3.32	1.79	3.80	2.00	1.06	4.00	-0.19	4.00	USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																										
Canada-French													United States of America (USA)													USA-Northeast	4.23	1.58	3.94	1.73	3.32	1.79	3.80	2.00	1.06	4.00	-0.19	4.00	USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																							
United States of America (USA)													USA-Northeast	4.23	1.58	3.94	1.73	3.32	1.79	3.80	2.00	1.06	4.00	-0.19	4.00	USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																				
USA-Northeast	4.23	1.58	3.94	1.73	3.32	1.79	3.80	2.00	1.06	4.00	-0.19	4.00	USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																	
USA-Midwest	4.64	1.58	4.10	1.66	3.23	1.73	3.51	1.95	1.97	3.79	0.25	3.95	USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																														
USA-South	4.62	1.63	3.90	1.72	3.07	1.77	3.49	1.92	1.97	3.82	0.31	4.12	USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																											
USA-West	4.34	1.66	3.88	1.70	3.26	1.83	3.78	2.02	1.19	4.07	-0.07	4.18	USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																								
USA-Hawaii	4.54	1.69	4.08	1.68	3.25	1.70	3.51	2.01	1.91	3.91	0.18	4.00	Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																					
Mexico	3.90	1.98	4.00	1.90	3.03	2.07	3.00	2.00	1.89	4.11	-0.06	3.70	South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																		
South America													Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																															
Peru	4.36	1.64	3.71	1.70	3.47	1.87	3.41	1.91	1.18	3.73	0.74	3.82	Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																												
Bolivia	3.83	1.70	4.29	1.77	3.40	1.85	3.61	1.94	1.14	3.67	-0.68	3.57	Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																									
Chile	4.69	1.50	3.18	1.60	3.10	1.69	3.06	1.83	1.73	3.61	1.51	3.49	Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																																						
Argentina	4.86	1.47	2.45	1.71	3.17	1.99	3.26	1.99	0.89	3.69	2.32	3.65	Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																																																			
Brazil	3.57	1.65	3.39	1.64	3.32	1.54	3.63	2.03	0.01	4.32	-0.12	3.32	Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																																																																
Western Europe													Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																																																																													
Finland	4.54	1.49	3.22	1.72	3.18	1.56	2.89	1.73	1.65	3.17	1.61	3.46	United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																																																																																										
United Kingdom (UK)													UK-Northern Ireland	4.16	1.55	3.58	1.64	3.21	1.72	3.54	1.95	0.98	3.49	0.26	3.94	UK-England	4.48	1.54	3.85	1.65	3.20	1.64	3.50	1.78	1.64	3.71	0.34	3.92	The Netherlands	4.14	1.54	3.49	1.60	3.09	1.67	3.21	1.77	1.33	3.64	0.53	3.75	Belgium	3.35	1.61	3.63	1.74	3.17	1.81	4.00	1.89	-0.20	3.38	-1.10	4.31	France	3.78	1.57	3.97	1.77	2.83	1.72	3.60	1.96	1.36	4.04	-1.08	3.84	Switzerland	3.96	1.62	3.51	1.70	3.02	1.76	3.16	1.90	1.27	4.09	0.29	3.53	Germany	3.64	1.70	3.41	1.78	3.41	1.75	3.47	2.01	0.17	3.94	0.16	3.94	Austria	3.70	1.76	3.69	1.88	3.21	1.85	3.55	2.01	0.64	3.96	-0.32	3.99																																																																																																																																																																																																																																																							
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Eastern Europe													
Estonia	3.74	1.59	3.42	1.67	2.95	1.70	3.04	1.88	1.14	3.64	0.27	3.98	
Latvia	3.79	1.57	3.70	1.81	3.71	1.76	3.91	2.03	-0.12	3.60	-0.10	4.10	
Lithuania	4.08	1.64	3.63	1.74	3.41	1.95	3.47	2.00	0.86	4.23	0.36	3.58	
Poland	4.84	1.59	3.30	1.88	3.12	1.93	2.99	1.94	2.05	3.95	1.71	3.78	
Czech Republic	4.50	1.58	2.80	1.62	3.48	1.78	2.89	1.77	0.90	3.81	2.32	3.51	
Slovakia	4.67	1.54	3.22	1.73	3.53	1.86	3.35	2.05	1.02	3.67	1.66	3.99	
Ukraine	4.53	1.71	4.55	1.71	3.47	1.59	3.23	1.62	2.34	3.90	0.22	2.98	
Romania	4.92	1.68	4.18	1.93	4.21	1.87	3.11	2.05	1.78	3.54	1.84	4.43	
Serbia	4.67	1.75	3.33	1.77	2.67	1.76	3.09	1.92	2.24	4.06	0.92	3.86	
Croatia	3.83	1.60	3.47	1.78	2.99	1.66	2.90	1.75	1.42	3.57	0.44	3.59	
Slovenia	4.48	1.47	3.30	1.52	3.32	1.63	2.96	1.71	1.51	3.30	1.54	3.30	
Southern Europe													
Portugal	4.16	1.56	3.30	1.74	3.41	1.83	3.33	1.80	0.73	3.95	0.94	3.57	
Spain	4.86	1.57	2.83	1.61	3.69	1.85	3.37	1.86	0.64	3.74	2.33	3.65	
Italy	4.95	1.62	2.83	1.76	2.73	1.81	3.09	2.01	1.96	4.23	1.76	3.38	
Malta	4.40	1.65	3.76	1.92	3.75	1.93	3.71	1.96	0.71	4.13	0.69	4.06	
Greece	4.29	1.60	3.46	1.76	3.48	1.87	3.36	2.00	0.92	3.87	0.98	4.03	
Cyprus	4.84	1.56	3.66	1.86	3.61	2.09	3.43	2.08	1.44	4.12	1.34	3.83	
Middle East													
Turkey	4.30	1.80	3.41	1.84	3.34	1.81	2.87	1.83	1.48	4.23	1.37	3.69	
Lebanon	4.29	1.74	4.00	1.80	3.67	1.96	3.85	2.03	0.77	4.15	0.14	3.99	
Israel	4.58	1.61	3.43	1.66	2.85	1.64	3.02	1.84	2.13	3.76	0.98	3.51	
Jordan	4.36	1.87	3.51	2.20	3.46	2.10	3.40	2.01	0.98	4.19	0.92	3.82	
Africa													
Morocco	4.23	1.96	4.19	2.12	3.95	2.03	3.83	2.04	0.60	4.10	0.17	4.04	
Ethiopia	3.37	1.97	4.74	2.00	3.99	2.04	3.94	2.08	0.14	4.01	-1.31	3.99	
Tanzania	4.09	2.08	3.42	2.15	4.46	2.15	4.30	2.16	-1.25	3.83	0.92	4.31	
Congo	5.20	1.80	2.86	1.87	3.11	1.98	3.01	1.98	1.92	3.58	2.43	4.12	
Zimbabwe	4.46	1.87	3.81	2.10	3.52	2.21	4.10	2.20	0.68	4.36	0.07	4.18	
Botswana	4.48	2.06	4.23	2.06	3.67	2.07	4.46	2.18	0.58	3.82	-0.55	4.27	
South Africa	4.72	1.38	4.15	1.78	3.22	1.83	3.42	1.84	2.23	3.64	0.36	3.41	

(continued)

TABLE 4 (continued)

Cultural Region	Secure		Dismissing		Preoccupied		Fearful		Model of Self		Model of Other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Oceania												
Australia	4.32	1.52	3.97	1.53	3.25	1.77	3.47	1.92	1.57	3.90	0.13	3.77
New Zealand	4.29	1.45	4.03	1.65	3.01	1.61	3.70	1.96	1.61	3.77	-0.43	3.90
Fiji and Pacific Islands	4.12	1.80	4.21	1.96	3.56	1.95	4.14	2.00	0.64	3.83	-0.66	4.26
South and Southeast Asia												
India	4.21	1.68	4.14	1.81	3.36	1.77	3.86	2.14	1.13	4.06	-0.43	4.20
Bangladesh	4.77	1.91	4.78	2.05	4.41	2.37	4.18	2.24	0.96	4.07	0.21	4.61
Malaysia	3.81	1.66	4.44	1.71	3.82	1.91	3.66	1.81	0.79	3.13	-0.44	3.24
Indonesia	4.37	1.79	4.44	1.78	4.77	1.87	5.04	1.90	-1.01	3.70	-0.34	3.45
Philippines	4.96	1.52	4.26	1.66	4.05	1.79	4.08	1.92	1.08	3.89	0.67	3.15
East Asia												
Hong Kong	4.25	1.26	4.00	1.45	3.91	1.42	3.55	1.52	0.79	3.18	0.62	2.97
Taiwan	4.37	1.60	3.95	1.72	4.53	1.65	4.23	1.74	-0.44	4.02	0.72	3.26
South Korea	4.13	1.54	3.63	1.69	3.66	1.71	2.59	1.59	1.50	3.14	1.58	3.22
Japan	3.67	1.47	2.56	1.49	4.03	1.78	3.68	1.85	-1.47	3.87	1.47	3.12
Worldwide sample	4.32	1.69	3.69	1.81	3.37	1.85	3.47	1.97	1.17	3.90	0.54	3.92

on preoccupied romantic attachment, in other words, tended to be less individualistic (or more collectivist) in orientation than nations low on preoccupied romantic attachment. This association seemed particularly driven by Asian cultures.

For descriptive purposes, we have listed down the right side of Table 4 the mean levels of Model of Self and Model of Other for the 62 cultural regions of the ISDP, controlling for age and gender. These values were obtained by conducting two separate ANCOVAs. In each case, an internal working model scale served as the dependent variable and cultural region as the independent variable, with age and gender serving as covariates. The results in Table 4, therefore, represent the levels of each internal working model within each cultural region after the effects of age and gender across all samples have been partialled out. This method of analyzing the data helped to ensure that confounding differences in age and gender composition across samples were reduced. Also, although the standard deviations in Table 4 seem disproportionately larger than the means, this is because the Model of Self and Other scales were computed such that values could range from  $-12.0$  to  $12.0$ , with  $0.0$  as a centering point (Griffin & Bartholomew, 1994a, 1994b).

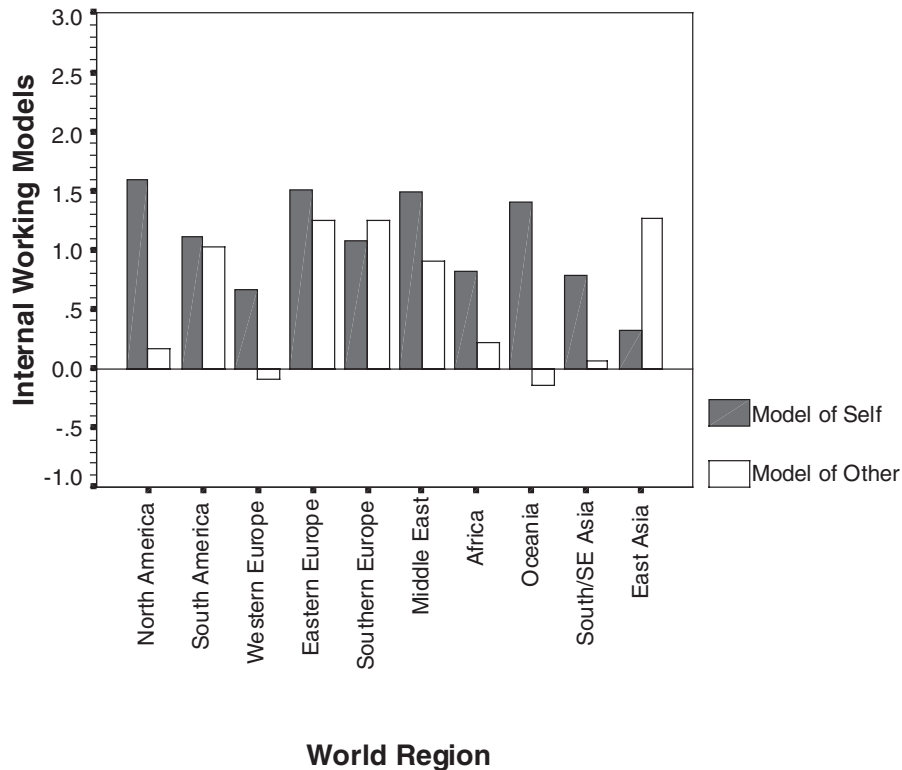
In Figure 1, we display the Model of Self and Model of Other scores across the 10 world regions of the ISDP. As seen in Figure 1, the region of East Asia was peculiar in that it was the only region where Model of Other scores were conspicuously higher than Model of Self scores. This finding, alongside the culture-level results discussed above, supports the hypothesis that individuals from nations in which people are inclined to judge the self in terms of interconnectedness and the value that they provide to others (Markus & Kitayama, 1991) tend also to strive for the approval of highly valued others within the special context of romantic relationships.

#### **OBJECTIVE 5: TESTING EVOLUTIONARY THEORIES OF ROMANTIC ATTACHMENT**

According to Chisholm (1996, 1999), in cultures with fewer resources, the optimal mating strategy is to reproduce early and often, a strategy related to high fertility rates and insecure attachment. In cultures that have abundant resources, the optimal strategy is to invest heavily in fewer numbers of offspring, a strategy associated with low fertility and secure romantic attachment. We found support for Chisholm's theory by relating national fertility rates to our ISDP findings on attachment. Based on 54 national fertility rates provided by the United Nations (United Nations Development Program, 2001; data on Serbia and Taiwan were not provided), those nations with higher fertility rates tended to have higher levels of fearful romantic attachment,  $r(52) = .38, p < .01$ , and dismissing romantic attachment,  $r(52) = .32, p < .05$ . Thus, insecure romantic attachment was associated with more prolific reproduction across cultures, as predicted.

According to Belsky and his colleagues (1991), certain social experiences should affect romantic attachment styles in evolutionary adaptive ways. Namely, those people who are socially exposed to high levels of stress—especially insensitive and inconsistent parenting, harsh physical environments, and economic hardship—should tend to develop insecure romantic attachment styles associated with short-term mating (Schmitt, 2003). Individuals from social contexts with lower stress, such as people from cultures with ample resources, should develop more secure romantic attachment styles associated with monogamous mating (see also Belsky, 1997, 1999; Rohner & Britner, 2002).

One national index of stress and human hardship is the Human Development Index provided by the United Nations (United Nations Development Program, 2001). Human



**Figure 1: Model of Self and Model of Other Levels Across the 10 World Regions of the International Sexuality Description Project ( $N = 17,804$ )**

NOTE: SE = southeast.

development is defined by the United Nations as the achievement of a nation in basic human capabilities, including health, longevity, education, and a decent standard of living. We found that those nations with low levels of human development tended to have high levels of preoccupied,  $r(52) = -.48, p < .001$ ; fearful,  $r(52) = -.42, p < .01$ ; and dismissing romantic attachment,  $r(52) = -.41, p < .01$ . Oddly, neither fertility rates nor human development were correlated with national levels of secure romantic attachment.

An additional index of stress and economic hardship can be derived from the national level of per capita GDP. Assessments of each ISDP nation's GDP (in U.S. dollars) were taken from a United Nations database (United Nations Development Program, 2001). We found that higher GDP was associated with lower dismissing attachment,  $r(52) = -.34, p < .01$ , and preoccupied attachment,  $r(52) = -.43, p < .001$ . All of these findings support the premises of Belsky (1997), Chisholm (1996), and others who have suggested that stressful environments (i.e., high fertility, low human development, and few resources) cause an increase in insecure romantic attachment, an increase presumably linked to short-term-oriented mating strategies (Kirkpatrick, 1998; Schmitt et al., in press).

## DISCUSSION

We accomplished five primary objectives by measuring adult romantic attachment across 62 cultural regions. First, we provided some evidence that the Model of Self and Model of Other attachment scales of the Relationship Questionnaire are valid within most cultures of the ISDP. Second, we found that the Model of Self and Other dimensions do not always underlie the four categories of attachment in the same way across all cultures. Third, we found that the secure form of romantic attachment is normative across 79% of ISDP cultures. Fourth, we confirmed that East Asians are particularly prone to preoccupied romantic attachment. Fifth, we found support for several evolutionary theories of romantic attachment by showing that insecure romantic attachment is associated with higher fertility rates, lower human development, and lower resource levels across cultures. Before more fully discussing our results, however, several methodological limitations should be noted.

### LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

All self-report survey studies are limited in many ways (Andersen & Broffitt, 1988; Schwarz, 1999), but prudence is especially warranted for interpreting our ISDP findings. One impetus for caution is that our self-reported survey of romantic attachment contained only four rating scales, with each form of romantic attachment judged by responses to only one item. The four-item Relationship Questionnaire has been found useful in previous research (Bartholomew & Horowitz, 1991) and is independent of response biases as compared to other attachment measures (Leak & Parsons, 2001). Also, one-item scales can often serve as well as multi-item scales (Barrett & Paltiel, 1996). Nonetheless, we believe the use of the Relationship Questionnaire renders our findings as tentative, pending future cross-cultural studies using multi-item measures of adult romantic attachment (e.g., Brennan et al., 1998). Moreover, uncertainties remain as to whether our etically imposed measurement method captured the full spectrum of romantic attachment psychology across cultures, whether self-report measures of adult romantic attachment assess the same constructs as the Adult Attachment Interview (Bartholomew & Shaver, 1998), and whether childhood attachment is truly a precursor of adult romantic attachment (though see Waters et al., 2000). As a result, researchers should not make overly broad or sweeping conclusions about the romantic attachment psychology of individual cultural regions or nations based solely on the limited self-report data reported here.

Indeed, there are three additional reasons why caution is warranted for characterizing national romantic attachment tendencies based on our ISDP samples. First, all ISDP samples were convenience samples rather than representative or national probability samples (cf. Mickelson, Kessler, & Shaver, 1997). Still, the fact that we controlled for age and gender, and explored the potential confounding effects of other demographic variables, helped us to feel somewhat confident that the romantic attachment differences among the 62 cultural regions were likely because of the effects of culture and not extraneous demographic confounds. Future research using representative sampling and more complex statistical procedures (e.g., latent variable modeling) is a logical next step for determining whether the national variations in romantic attachment uncovered here penetrate into all layers of national cultures (e.g., see Eid, Langeheine, & Deiner, 2003). Perhaps researchers could efficiently explore a subset of nations from the ISDP using representative sampling by selecting those cultures shown in this article to represent extremes of romantic attachment. Representative

sampling would also help researchers investigate the role of religious, political, and ethnic variation within each culture.

A second reason for caution is that most of our samples consisted of college students. We included community members when possible, but many of the patterns and universals we revealed among cultural regions may be restricted to college-age populations. Generally, we found that older participants across cultures had higher Models of Self and lower Models of Other, but differences between college students and community samples within cultural regions were negligible once age was accounted for. We also found that socioeconomic status was not highly related to romantic attachment variation within most cultures. Nevertheless, future research in which multiple age and economic groups are assessed across multiple cultures may uncover significant interactions between demographic features and culture that were not discernable in the current investigation.

Third, the nonprofessional translation of our measures into 30 languages leaves open the possibility that some translations were poor, and in some cases, the translations may have failed to maintain the original meaning of our key romantic attachment concepts. The translation/back-translation procedure we used tries to balance the competing needs of making the translation meaningful and naturally readable to native participants while preserving the integrity of the original measure and its constructs (Brislin, 1980). It should be noted, however, that this procedure is regarded as an etic approach to cross-cultural psychology (Berry, 1969; Church, 2001) and may be somewhat insensitive to culture-unique aspects of romantic attachment psychology (Van de Vijver & Leung, 1997). Given the grossly consistent patterns of correlations found in this study, the survey items of most measures clearly had similar meaning to participants from different linguistic backgrounds. Even with linguistic equivalence, however, any observed cultural differences may be due not only to a real cultural disparity on romantic attachment but also to nonidentical response styles prevalent in various cultures (Diener & Suh, 2001; Grimm & Church, 1999). Cultural differences in acquiescence and social desirability, for example, may have caused the clustering of insecure attachment styles in some cultures. Consequently, future cross-cultural studies should employ measures of acquiescence, social desirability, impression management, and self-deception alongside longer, multi-item attachment measures.

#### ARE MODELS OF SELF AND OTHER PANCULTURAL CONSTRUCTS?

Based on the series of statistical tests originally used by Bartholomew and Horowitz (1991), we found conflicting evidence concerning the cultural universality of the two-dimension, four-category structure of romantic attachment. Some evidence clearly showed that the Bartholomew and Horowitz model was not universal across all cultures. For example, the attachment scales of the Relationship Questionnaire did not interrelate across cultures as predicted by the two-dimension, four-category model. Secure and fearful forms of romantic attachment were negatively correlated, as predicted, in 63% of cultures, but preoccupied and dismissing attachment were negatively correlated in only 25% of cultures. The latter percentage clearly falls short of our cultural-universality thresholds. Of particular importance is the fact that specific world regions, and not just those cultures with smaller sample sizes, tended to fail tests of universality. For example, none of the seven African cultures displayed a significant negative correlation between secure and fearful attachment. In South and Southeast Asia, the secure-fearful relationships were equally inconsistent, with a peculiar correlation in the opposite of the predicted direction in Malaysia. Moreover, factor analyses demonstrated that the four categories of romantic attachment do not align as

predicted within two-dimensional space in the world regions of South America, Western Europe, Eastern Europe, the Middle East, Africa, and East Asia.

On the other hand, a considerable amount of evidence supported the universality of the basic two-dimensional structure of romantic attachment. For example, the factor analytic results suggested that two dimensions underlie romantic attachment across all world regions. In almost all individual cultures, Models of Self and Other formed independent dimensions. In addition, there was evidence of convergent and discriminant validity for the Model of Self and Model of Other scales within most cultures. Individuals with more positive Models of Self tended to have higher self-worth but did not tend to have higher levels of prosociality. Individuals with positive Models of Other tend to have higher prosociality but did not tend to have higher self-worth. All of these findings were considered near universals.

Although it is difficult to draw strong inferences given our sampling limitations and the conflicting pieces of statistical evidence, we feel it is reasonable to tentatively conclude that in nearly all cultures, people possess basic cognitive-emotional attitudes that constitute romantic attachment Models of Self and Other. These internal working models likely exist as pancultural constructs, forming independent dimensions that underlie romantic attachment types across cultures. However, the four categories or types of romantic attachment outlined by Bartholomew and Horowitz (1991)—secure, dismissing, preoccupied, and fearful—seem not to reside within this two-dimensional space in precisely the same way across all regions of the world. It is unclear why cultures would vary in romantic attachment structure, especially given the strong theoretical rationale for thinking that internal working Models of Self and Other are elemental components of human psychology (Bowlby, 1988). Perhaps response biases or translation difficulties were to blame in the present study. What is clear is that more work is needed to reveal why certain cultures vary in the psychological structure of romantic attachment.

Ultimately, if the underlying psychology of specific attachment styles is found to fluctuate across cultures, this may have important implications for our understanding of romantic relationship processes and outcomes, as well as for treatments of attachment-related disorders in those cultures (Slade, 1999). For example, if fearful attachment was found to be unassociated with Models of Other in a given culture, the therapeutic emphasis in that culture for treating symptoms of fearful attachment should probably not focus on increasing the value that fearful patients place on others. Instead, clinical efforts would be more efficiently allocated toward increasing a fearful individual's positive attitudes toward the self (Blatt, 1995). It is our hope that the research reported here will stimulate future large-scale studies into the diversity of developmental causes and relationship consequences of adult romantic attachment.

#### **SECURE ROMANTIC ATTACHMENT: IS IT NORMATIVE?**

According to the normativity hypothesis (van IJzendoorn & Sagi, 1999), secure attachment should be the highest rated form of romantic attachment across cultures. Given the large number of cultures in the ISDP, evidence of universality in this study would provide compelling support for the normativity hypothesis. Descriptive romantic attachment information from this diverse collection of cultures also may help to reveal why some clusters of cultures deviate from this normative trend.

We found secure attachment to be the highest rated form of romantic attachment across 79% of ISDP cultures, qualifying this as a near universal of human psychology. However, secure romantic attachment was significantly lower than dismissing, preoccupied, or fearful

romantic attachment across several cultures. We interpret these results as providing only qualified support for the normativity hypothesis. Because the Relationship Questionnaire does not provide for categorical placement of individuals, however, our findings provide a very limited test of the normativity hypothesis.

Why is secure attachment not the highest rated form of romantic attachment across all cultures? We consider three possibilities. First, the local ecologies of some individual cultures may naturally elicit more insecure forms of romantic attachment and mating behavior (Barber, 2002; Belsky et al., 1991; Pedersen, 1991). For example, in several African cultures—cultures that experience high levels of stress—insecure forms of romantic attachment tend to be quite high. Second, the sociohistorical forces that presumably cause certain people to exhibit more interdependent or collectivist interpersonal orientations across cultures may similarly impact their basic romantic attachment orientations (Markus & Kitayama, 1991). In Japan and Taiwan, for example, levels of secure romantic attachment are lower than preoccupied romantic attachment levels. Third, geographic variations in romantic attachment may be caused by shared religious, political, or socioeconomic factors. As portrayed in Figure 1, in most world regions, the average Model of Self and Other scores are positive, suggesting most regions are typically secure in orientation. However, in Western Europe and Oceania, the average Model of Other score drops below zero (0), suggesting that people in these regions typically develop dismissing romantic orientations. In contrast, the world region of East Asia possesses an average Model of Self score nearing the zero point, a score that is dwarfed by their high Model of Other scores. It seems possible that shared religious, political, or economic factors play a role in these patterned deviations from secure attachment.

#### ARE EAST ASIANS PRONE TO PREOCCUPIED ATTACHMENT?

We found that East Asian cultures were particularly high on preoccupied romantic attachment. This result may reflect the fact that in many East Asian cultures, psychological validation (in this case romantic validation) is heavily dependent on the opinion of others (Markus & Kitayama, 1991). Such a finding would be consistent with cultural variation in parent-child attachment (van IJzendoorn & Sagi, 1999), and our finding that preoccupied attachment cooccurred with high rates of collectivism (Hofstede, 2001) provides further support for the view that East Asians tend to judge the self primarily in terms of interconnectedness and the value that they provide to others (Oishi & Diener, 2001).

#### EVOLUTIONARY THEORIES OF ROMANTIC ATTACHMENT

Several evolutionary theorists have hypothesized that key aspects of culture are related to adult romantic attachment styles (e.g., Belsky et al., 1991). According to these theories, early social experiences adaptively channel children down one of two reproductive pathways. Those people who are socially exposed to high levels of stress, including more prolific rates of reproduction, tend to develop insecure romantic attachment styles (Chisholm, 1996). Individuals from social contexts with lower stress, such as people from cultures with ample resources and low fertility rates, should develop more secure romantic attachment styles. We found overwhelming support for these theories in the ISDP. Those nations possessing high fertility rates had higher levels of fearful and dismissing attachment. Those nations with low scores on the Human Development Index had higher levels of preoccupied, fearful, and dismissing attachment. Those cultures with low GDP per capita had higher levels of dismissing



and preoccupied romantic attachment. Overall, it appeared that the most consistent relationship was between indexes of cultural stress and dismissing attachment, a finding that supports Kirkpatrick's (1998) assertion that dismissing romantic attachment, among the various forms of insecure attachment, is most closely associated with short-term mating strategies (see also Schmitt et al., in press).

#### FINAL COMMENTS

We conclude by noting that, although much our focus has been on between-culture variation, the within-culture variation of the ISDP should also be investigated. Many of our cultural regions contain numerous cocultures consisting of linguistic, ethnic, and religious varieties. Indeed, no given culture in our study had perfectly homogenous romantic attachment orientations, and the intracultural variation presented in our tables may provide useful windows into the special social psychology of romantic relationships within each culture. For example, the standard deviations of preoccupied attachment in East Asian cultures were highly restricted as compared to other world regions, similar to findings reported in other cross-cultural studies (see Diener & Suh, 2001).

Future researchers also may wish to group our 62 cultures into different world regions. Inglehart (1997) chose to group the World Values Survey cultures into North American, Latin American, Northern Europe, Catholic Europe, Eastern Europe, South Asian, Confucian, and African world regions when investigating the relationship between national well-being and attitudes toward authority. It is our intention that the romantic attachment profiles of individual nations provided in this study will stimulate further investigations into the important relationships among geography, religion, politics, and attachment, and in doing so other world groupings may emerge as more useful than the preliminary categories employed here.

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*David P. Schmitt is the founding director of the International Sexuality Description Project. He is currently an associate professor at Bradley University. His research interests include the evolution of human mating strategies and sociocultural predictors of high-risk sexual behavior.*