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Evolutionary Perspectives on Romantic Attachment and Culture

How Ecological Stressors Influence Dismissing Orientations Across Genders and Geographies

David P. Schmitt
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Cultural differences in adult romantic attachment were investigated as part of the International Sexuality Description Project—a survey study of 17,804 people from 56 nations. Evolutionary theories of romantic attachment predicted that dismissing attachment should be associated with high-stress ecological environments. In support of this perspective, dismissing attachment was associated across cultures with relatively few resources, low life expectancy, high child malnutrition, high average temperature, high fertility rate, high teen birthrate, and a high pace of life. Gender differences in dismissing romantic attachment were evident in most cultures, with men generally reporting higher levels of dismissing attachment than women. The degree of gender differentiation in dismissing romantic attachment varied across cultures in evolutionary-predictable ways, with smaller gender differences evident in cultures with high-stress and high-fertility reproductive environments. Discussion focuses on the limitations of the current findings and directions for future evolutionary-informed research on cultural variability in romantic attachment.

Keywords: *romantic attachment; evolutionary psychology; culture*

Bowlby's (1969) ethological theory of attachment states that humans possess an evolved, behavioral–motivational system that emerges in infancy and is designed to protect children as they pass through discrete phases of development. Bowlby theorized that successful navigation of attachment stages provides children with a *secure emotional base* from

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which they competently lead the rest of their relational lives (Bowlby, 1988). Although cross-cultural researchers have sometimes questioned whether the secure base of attachment universally fosters relational competence (e.g., Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000), most research confirms that the *secure* form of attachment is normative and has similar health-related correlates across cultures (Ainsworth & Marvin, 1995). For example, secure attachment has been documented as the most prevalent form of parent–child attachment in the United States (65% of children are typically classified as secure), the Netherlands (67%), and Germany (56%) as well as in many non-Western cultures such as Uganda (57%), China (68%), and Japan (68%; see van IJzendoorn & Sagi, 1999).

Across cultures, developmental researchers have consistently found that parental warmth and emotionally supportive caregiving are associated with children developing attachment security (Ainsworth, Blehar, Waters, & Wall, 1978; Rohner & Britner, 2002), whereas insensitive and inconsistent caregiving generally leads to insecure attachment (Dozier, Stovall, & Albus, 1999; Greenberg, 1999). Longitudinal studies also confirm that these early attachment orientations endure and continue to affect our ability to relate to others in close personal relationships well into adulthood (Fraleigh, 2002; Waters, Merrick, Treboux, Crowell, & Alberstein, 2000).

Bowlby (1969) originally postulated that early attachment experiences affect subsequent personal relationships owing to the crystallization of internal working models or basic cognitive–emotional attitudes of the mind. In secure individuals these internal models assert that the self is valuable and worthy of love (i.e., children develop a positive *model of self*) and that others are valuable and worthy of trust (i.e., children develop a positive *model of other*). Unresponsive, abusive, or inconsistent caregiving experiences, in contrast, leave children with negative or dysfunctional internal models. Dysfunctional models may result from a negative model of other (through distrust and low valuing of the parent; i.e., *dismissing* attachment), a negative model of self (through low self-esteem and sensitivity to rejection; i.e., *preoccupied* attachment), or negative models of both self and others (i.e., *fearful* attachment; see Bartholomew, 1990).

Adult Romantic Attachment

In the mid-1980s, researchers began to investigate how Models of Self and Other might apply to people's cognitive–emotional attitudes toward romantic love and sexual relationships (Hazan & Shaver, 1987). Over the last two decades, a growing body of evidence has shown that attachment orientations

deeply influence the way people think and feel about their romantic relationships (Collins & Read, 1990; Feeney, 1999). Variation in adult attachment orientation has been linked to patterns of romantic relationships such as conflict and stress (Rholes, Simpson, & Stevens, 1998; Schmitt, 2002), satisfaction and harmony (Brennan & Shaver, 1995) as well as the temporal duration of romantic relationships (Kirkpatrick, 1998). In general, people with secure attachment styles tend to experience less conflict, more satisfaction, greater stability, and longer duration in their romantic relationships (Belsky, 1999). People with insecure attachment styles (i.e., dismissing, preoccupied, or fearful) tend to experience more conflict, less satisfaction, lower stability, and shorter durations in their romantic relationships (Simpson, 1999).

More specifically, in romantic relationships dismissing individuals tend to emphasize their own needs and concerns; however, they also protect themselves against romantic disappointment by avoiding emotionally close relationships and maintaining a sense of independence and invulnerability. Dismissing attachment has been empirically linked to more short-term oriented mating strategies and unrestricted sociosexuality (Schmitt, 2005a). Those with preoccupied attachment tendencies, on the other hand, are inclined to strive for self-acceptance by gaining the romantic approval of highly valued others. Preoccupied romantic attachment styles appear to be predominant in East Asian cultures and in other cultures that emphasize collectivistic values (Schmitt, Alcalay, Allensworth, et al., 2004). Fearfully attached 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).

Evolutionary Perspectives on Romantic Attachment

In combining aspects of life history theory (Low, 1998) and attachment theory (Bowlby, 1969), Belsky, Steinberg, and Draper (1991) presented a model of how parent-child attachment relationships might lead to individual variation in adult romantic attachment styles and the differential pursuit of long-term versus short-term mating strategies (Buss & Schmitt, 1993). According to this model, early social experiences adaptively channel children down one of two reproductive pathways.¹ Children who are socially exposed to high levels of stress—especially insensitive/inconsistent parenting, harsh ecological environments, and economic hardship—tend to develop dismissing attachment styles. Such children also tend to physically mature earlier than those children who are exposed to less stress (Ellis, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1999).

According to Belsky and his colleagues (1991), dismissing attachment insecurity and early physical maturity subsequently lead to the evolutionary-adaptive development of what is called an *opportunistic* or short-term oriented mating strategy in adulthood (see also Kirkpatrick, 1998; Simpson, 1999). An opportunistic strategy, it is thought, leads to higher levels of fitness in unreliable, high-stress reproductive environments. In cultures with inconsistent or stressful social relations, therefore, children may adaptively respond by developing the more viable life history strategy of high risk taking (Quinlan & Quinlan, 2007) and pursuing short-term mating strategies rooted in dismissing attachment (Schmitt, 2005a). Conversely, children exposed to lower levels of stress and less environmental hardship tend to be emotionally more secure, mature physically later, and take less risks. These children are thought to develop a more *investing* reproductive strategy in adulthood (i.e., monogamy and secure romantic attachment) that pays higher evolutionary dividends in low-stress environments (Burton, 1990; Lancaster, 1989).

Cultural Differences in Romantic Attachment

In the view of evolutionary psychologists, all children come equipped with the potential for developing either secure or insecure attachment styles (Belsky, 1999; Simpson, 1999). We all possess context-dependent psychological adaptations that are sensitive to local environments and regulate our attachment styles in adaptive ways. Although the causal mechanisms that influence attachment are most prominently located within the family, evolutionary perspectives also suggest that certain aspects of culture may be related to romantic attachment variation; for example, in cultures where families are under more stress and have fewer resources, dismissing romantic attachment levels should be manifestly higher than in cultures with lower stress and more ample resources (Belsky, 1997).

Chisholm (1996, 1999) argued further that local mortality rates—presumably related to high-stress and inadequate resources—act as the specific cues that contingently shift human attachment and mating strategies in evolutionary-adaptive ways. In cultures with high mortality rates, the optimal mating strategy is to reproduce early and often, a strategy related to dismissing attachment, short-term temporal orientations, and unrestricted sociosexuality (Ellis et al., 2003; Schmitt, 2005a). In cultures that are physically safe and emotionally supportive, mortality rates are lower and the optimal strategy is to invest heavily in fewer numbers of offspring. In safer environments, one should pursue a long-term mating strategy associated

with secure attachment and restricted sociosexuality. This perspective suggests that cultures with higher mortality rates, earlier reproduction, and more prolific reproduction should manifest higher levels of dismissing romantic attachment than cultures with lower mortality rates, later reproduction, and relatively limited reproduction.

Gender Differences in Romantic Attachment

Previous research on gender differences in adult romantic attachment has documented that men report significantly more dismissing attachment levels than women (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). The finding of gender differences in dismissing romantic attachment seems to fit with common beliefs about social and emotional differences between the sexes—with men usually seen as less emotional, less nurturing, and less willing to connect with others (Bem, 1993). Men's greater dismissiveness is likewise consistent with self-report surveys of emotional distance and social restrictiveness. In a review of literature on gender and emotion, Brody and Hall (1993) concluded that men were much less likely than women to express emotions associated with affiliation and social bonding (see also Geary, 1998). In a large meta-analysis of gender differences in personality traits (Feingold, 1994), men across cultures were shown to be less nurturing, trusting, and gregarious than women—a trait profile closely aligned with the dismissing form of romantic attachment. Research on romantic couples has revealed that men report less comfort with emotional closeness in their relationships (Feeney, 1999), whereas women more often complain of men's lack of closeness (Buss, 1989) and find more satisfying those men who show fewer indications of dismissing romantic attachment (Kirkpatrick & Davis, 1994). Even though within-sex variation in dismissing romantic attachment can be considerable (Bartholomew & Horowitz, 1991), several sources of evidence—social stereotypes, self-perception differences, and romantic partner-reported reactions—all seem to converge on the notion that men, on average, are significantly more dismissing in romantic attachment orientation than women (Schmitt, Alcalay, Allensworth, et al., 2003).

Many evolutionary psychological theories of romantic attachment would predict that gender differences in dismissing romantic attachment should generalize across cultures. For example, Kirkpatrick (1998) has suggested that the psychology of dismissing romantic attachment is conceptually similar to the psychology of short-term mating, perhaps even synonymous with it (see also Belsky, 1999; Simpson, 1999). Adults who report higher levels of dismissing

romantic attachment tend to have more accepting attitudes toward casual sex, and to engage in more promiscuous and indiscriminate sex, than people with more secure attachment styles (Bogaert & Sadava, 2002; Brennan & Shaver, 1995). In a recent cross-cultural study involving over 10 world regions, Schmitt (2005a) documented that short-term mating tendencies were linked with higher levels of dismissing attachment, more so than with any other form of romantic attachment. When combined with the evolutionary premise that men are designed to follow short-term mating strategies and desire indiscriminate sex more than women (Buss & Schmitt, 1993; Schmitt, Alcalay, Allik, et al., 2003), this would imply that men may be designed in some ways to exhibit more dismissing romantic attachment orientations than women. Evolutionary psychologists have also argued that men's natural dismissiveness serves an evolved function once in romantic relationships, one in which withholding emotions protects men against women's probes into male commitment and fidelity (Buss, 1994). Based on these evolutionary perspectives, men may be more dismissing in romantic attachment than women across cultures because of the evolved design features of men's mating psychology (see Schmitt, Alcalay, Allensworth, et al., 2003).

Culture and the Magnitude of Gender Differences in Romantic Attachment

Evolutionary psychology perspectives neither expect that all cultures should have precisely the same level of gender difference in dismissing romantic attachment nor expect that gender differences must be consistently large in magnitude across all cultures if the differences are, in part, owing to evolved sexual differentiation. This is how evolutionary theories are often portrayed but it is a distorted picture of the evolutionary perspective on sexual differentiation (e.g., Eagly & Wood, 1999). If a psychological gender difference does not always appear in every culture, or is somewhat diminished across some cultures, this is not *prima-facie* evidence that the gender difference is largely unrelated to evolved biology (Cronk, 1999; Lonner, 1980). Instead, there are adaptive reasons why, even though men and women are biologically designed with a propensity to psychologically differ in certain ways, they sometimes fail to display the exact same degree of difference across all cultures.

For example, consider gender differences in homicide, violence, and physical aggression (Goldstein, 2001; Hyde, 1986). In polygynous cultures where men can gain access to multiple wives through status competitions, normal gender differences in aggressive socialization practices tend to be

accentuated (Low, 1989) as do the concomitant gender differences in adult aggression (e.g., Chagnon, 1983). In this case, gender differences may emerge primarily, or more strongly, in a polygynous context because it was under these ecological conditions that greater male violence (and hence greater sexual differentiation) was reliably associated with increased ancestral survival and reproduction (see Low, 2000; Mealey, 2000). Thus, gender differences may be firmly rooted in our evolutionary biology although simultaneously varying across cultures because of an adaptive sensitivity to ecology and local context (Alexander, 1990; Gaulin, 1997).

One ecological context that may have a special impact on gender differences in dismissing romantic attachment is the amount of ecological stress in local environments. Some cultures possess high-stress ecologies (Chisholm, 1999; Keller, 1990). Cultures with high levels of pathogens and disease, for example, are thought to present high-stress environments because raising offspring in disease-prone environments is associated with higher childhood mortality (see Gangestad & Buss, 1993; Low, 1990). Indeed, mortality rate (or low life expectancy) itself is a strong indicator of ecological stress. Reproductive environments with high fertility rates and scarce resources can also be considered stressful because human children, relative to other primate species, require heavy parental investment, and raising multiple offspring makes it more difficult to invest the necessary amounts of care in each child (Eibl-Eibesfeldt, 1989; Harvey & Clutton-Brock, 1985).

According to Belsky et al. (1991), when environments are particularly stressful, women may be designed to shift away from their primary long-term mating strategy with its accompanying low levels of dismissing romantic attachment (Belsky, 1999; Kirkpatrick, 1998) and instead develop a more short-term mating strategy with higher levels of dismissing attachment (see also Chisholm, 1996). In women, this adaptive shift to a dismissing/short-term strategy may have been based in part on early reproduction that allowed their family members to help raise offspring (Burton, 1990; Lancaster, 1989), on mating with multiple men to garner resources or protection from more than one putative father (Hrdy, 1981; Smuts, 1985), and on obtaining access via short-term mating to valuable men possessing *good genes*, genes that are better able to withstand the pathogens and developmental stressors of harsh environments (Gangestad, 2001; Gangestad & Simpson, 2000). Thus, women's dismissing romantic attachment levels may be culturally contingent, adaptively shifting in accord with the harsh physical environments (Belsky et al., 1991) and high fertility trends (Chisholm, 1996) of their local ecologies (see also Gangestad, Haselton, & Buss, 2006; Greiling & Buss, 2000).

Men may also be driven toward short-term mating and dismissing attachment in high-stress environments, but the effect appears to be more pronounced in women (Draper & Harpending, 1982; Ellis et al., 1999). This may be because of men having evolved to preferentially follow more of an unrestricted or short-term reproductive strategy (Schmitt, 2005b; Simpson & Gangestad, 1991), at least when doing so was unlikely to have strong negative consequences on survival (Schmitt, Alcalay, Allik, et al., 2004). Thus, men's culturally contingent movement to short-term mating and dismissing romantic attachment in high-stress environments may be less conspicuous or less severe than women's shift (see also Baumeister & Twenge, 2002). As a result, high-stress environments may be associated with smaller gender differences in dismissing romantic attachment.

The preceding evolutionary perspectives on romantic attachment lead to the following five hypotheses concerning the cultural differences and gender differences in dismissing romantic attachment across cultures.

Evolutionary hypothesis 1: In cultures where families are under more ecological stress and have fewer resources, dismissing romantic attachment levels should be higher than in cultures with lower stress and ample resources (Belsky et al., 1991).

Evolutionary hypothesis 2: In cultures with higher mortality rates, earlier reproduction, and more prolific reproduction, dismissing romantic attachment levels should be higher than in cultures with low mortality, later reproduction, and limited reproduction (Chisholm, 1996, 1999).

Evolutionary hypothesis 3: Gender differences in the dismissing form of romantic attachment should exist across most cultures (Kirkpatrick, 1998). This hypothesis is based on the presumption that men are generally more oriented toward short-term mating through indiscriminate sex than women (Buss & Schmitt, 1993; Schmitt, 2005b), and dismissing romantic attachment in adults is indicative of short-term mating tendencies (Schmitt, 2005a; Simpson, 1999).

Evolutionary hypothesis 4: Gender differences in dismissing romantic attachment should be smaller in cultures with high-stress environments. This hypothesis is based, in part, on the notion that reproductively stressful environments trigger women's tendency toward short-term mating (Belsky et al., 1991; Ellis et al., 1999), including the adaptive desire for briefly mating with men who possess *good genes* (Gangestad, 2001; Gangestad & Simpson, 2000). Because high levels of dismissing romantic attachment are indicative of short-term mating tendencies (Kirkpatrick, 1998; Simpson, 1999), and because men are typically more oriented toward short-term mating through indiscriminate sex than women are (Schmitt, Alcalay, Allik, et al., 2003), women's levels of dismissing romantic attachment should become more similar to men's in cultures with high-stress environments.

Evolutionary hypothesis 5: Gender differences in dismissing romantic attachment should be smaller in cultures with higher mortality and fertility rates. Higher mortality and fertility levels are associated with less emotional investment in children, a trend that is linked across cultures with the development of dismissing forms of attachment (Chisholm, 1996). High fertility levels are also associated with short-term mating tendencies (Keller, 1990). Because high levels of dismissing romantic attachment are indicative of short-term mating tendencies (Kirkpatrick, 1998; Simpson, 1999), and because men are typically more oriented toward short-term mating through indiscriminate sex than women are (Schmitt, Alcalay, Allik, et al., 2003), women's levels of dismissing romantic attachment should become more similar to men's in cultures with higher mortality and fertility rates.

Method

Samples

As part of the International Sexuality Description Project (ISDP), over 100 social, behavioral, and biological scientists from 56 nations participated in this study (Schmitt, 2005b; Schmitt, Alcalay, Allensworth, et al., 2003, 2004). As seen in Table 1, romantic attachment data were obtained from all 56 nations of the ISDP.² Most samples comprised college students, although some included general members of the community. All samples were convenience samples and were administered an anonymous self-report survey. Further details on the sampling and assessment procedures are provided elsewhere (Schmitt, Alcalay, Allensworth, et al., 2003, 2004) and are available from the author.

Measures

Translation procedures. Researchers from nations where English was not the primary language used a translation/back-translation procedure and administered 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 bilingual 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. Further details on translation issues are provided elsewhere (Schmitt, Alcalay, Allensworth, et al., 2003, 2004) and are available from the author.

Table 1
The Geographic Distribution of Dismissing
Romantic Attachment Across 56 Nations

Nation	Sample Size	Dismissing Romantic Attachment		Sex Difference in Dismissing Attachment
		<i>M</i>	<i>SD</i>	<i>d</i>
Argentina	246	2.46	1.71	.32
Australia	489	3.96	1.53	.09
Austria	464	3.73	1.88	.04
Bangladesh	145	4.82	2.05	.11
Belgium	518	3.56	1.74	.20
Bolivia	179	4.27	1.77	.19
Botswana	213	4.23	2.06	-.13
Brazil	97	3.40	1.64	.29
Canada	1,028	3.82	1.65	.30
Chile	310	3.14	1.59	.39
Congo	181	3.03	1.89	.17
Croatia	222	3.49	1.78	.12
Cyprus	58	3.64	1.86	.31
Czech Republic	233	2.83	1.62	.31
Estonia	184	3.42	1.67	.05
Ethiopia	233	4.82	2.03	-.15
Fiji	159	4.27	1.97	-.07
Finland	119	3.24	1.69	.04
France	132	3.98	1.70	.14
Germany	784	3.46	1.78	.32
Greece	229	3.41	1.77	-.02
Hong Kong	201	4.01	1.43	.05
India	200	4.16	1.81	-.01
Indonesia	102	4.45	1.76	.13
Israel	390	3.47	1.66	.21
Italy	200	2.86	1.76	.21
Japan	257	2.59	1.48	.33
Jordan	274	3.50	2.20	-.04
Latvia	193	3.72	1.82	.43
Lebanon	259	3.98	1.80	.09
Lithuania	94	3.65	1.74	-.01
Malaysia	132	4.44	1.70	.29
Malta	327	3.74	1.92	.01
Mexico	214	4.00	1.94	.26
Morocco	178	4.16	2.13	.11
Netherlands	236	3.50	1.60	.30
New Zealand	273	4.00	1.64	.17

(continued)

Table 1 (continued)

Nation	Sample Size	Dismissing Romantic Attachment		Sex Difference in Dismissing Attachment
		<i>M</i>	<i>SD</i>	<i>d</i>
Peru	202	3.75	1.70	.25
Philippines	280	4.26	1.65	.35
Poland	835	3.29	1.88	.17
Portugal	252	3.32	1.75	.19
Romania	250	4.20	1.95	.05
Serbia	200	3.35	1.77	.32
Slovakia	182	3.22	1.73	.38
Slovenia	177	3.29	1.52	.37
South Africa	162	4.15	1.78	.01
South Korea	489	3.61	1.68	.19
Spain	273	2.80	1.61	.39
Switzerland	209	3.50	1.71	.37
Taiwan	209	3.98	1.72	.14
Tanzania	132	3.45	2.16	-.22
Turkey	409	3.44	1.84	.39
Ukraine	198	4.61	1.71	-.26
United Kingdom	481	3.64	1.66	.26
United States	2,783	3.93	1.70	.20
Zimbabwe	194	3.81	2.09	-.06
Total	17,670	3.69	1.81	.16

Note: Most samples primarily comprised college students, but some included general members of the community. All samples were convenience samples. Further details on sampling methods within each culture is available from the author.

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

Romantic attachment measure. All samples were administered the two-dimension/four-category measure of adult romantic attachment called the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991). This measure of attachment has one single-item secure romantic attachment scale and three single-item insecure scales including a dismissing romantic attachment. Each single-item scale uses a 7-point Likert-type scale rating format ranging from 1 (*doesn't describe me*) to 7 (*very accurately describes me*), with 4 as the midpoint of each scale. This measure of dismissing romantic attachment was used because the RQ is relatively brief, has been validated in several studies, and has been described as useful for examining the relationship of attachment to external cultural criteria (Bartholomew, 1994). In addition, single-item scales are increasingly being viewed as psychometrically sound alternatives to longer, more redundant multi-item

scales (Barrett & Paltiel, 1996). The complete RQ dismissing attachment item in English reads: "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."

Other measures of the ISDP. Participants in the ISDP were also asked to complete several measures not used in the present analyses. This included a measure of global self-esteem (Rosenberg, 1965) and a measure of Big Five personality traits (Benet-Martinez & John, 1998). Multiple sexuality measures were administered, including measures of short-term mating tendencies (Schmitt, Alcalay, Allik, et al., 2003), the sociosexual orientation inventory (Schmitt, 2005b; Simpson & Gangestad, 1991), a survey of human mate poaching experiences (Schmitt, Alcalay, Allik, et al., 2004), and the Sexy Seven trait measure of sexual self-description (Schmitt & Buss, 2000).

Archival measures. Several archival data sets were used in this article. National indicators of *low stress* included The Human Development Index, as reported in the United Nations Development Programme (UNDP, 2001), is defined as the achievement of a nation in basic human capabilities, including health, longevity, education, and a decent standard of living. Data on human development were obtained from the UNDP. Gross domestic product (GDP; per capita in U.S. dollars) data were obtained from the UNDP. Nation levels of self-esteem were taken directly from samples of the ISDP (Schmitt & Allik, 2005), national levels of life satisfaction were obtained from Diener and Suh (1999), and national levels of democracy were obtained from van de Vliert, Schwartz, and Huismans (1999).

National indicators of *high stress* included data on pace of life across 21 nations obtained from Levine and Norenzayan (1999). Higher scores indicate a faster and more stressful pace of life. Data on pathogen prevalence across cultures were obtained from Gangestad and Buss (1993). High levels of pathogens are thought to present high-stress reproductive environments because of the difficulty in raising offspring in disease-prone environments (see Gangestad & Buss, 1993; Low, 1990). Average temperature data were obtained for 49 nations from the study of van de Vliert et al. (1999).

The national indicator of *low mortality* was life expectancy, taken from the UNDP (2001). Life expectancy can be a good indicator of low environmental stress and general health of a culture, as it reflects both the low overall exposure people have to diseases and environmental dangers, as well as the quality of health care a nation provides to help reduce the harsh consequences of disease exposure (see also United Nations Statistics Division, 2001; scores were not available for Serbia or Taiwan).

National indicators of *high mortality* included infant mortality data obtained from the United Nations Statistics Division (2001). Data on percentage of low birthweight infants, percentage of child malnutrition, and HIV/AIDS rates were obtained from the UNDP (2001).

National indicators of *prolific reproduction* included fertility rates obtained from the UNDP (2001). Fertility rates were recorded such that higher levels indicate more children are born per female in a culture. Teenage birthrate data were obtained from the United Nations Statistics Division (2001).

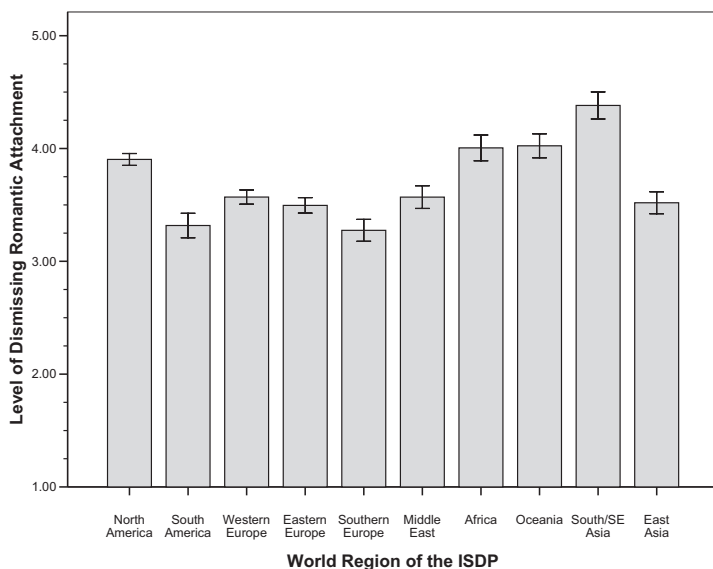
Results

Overall levels of dismissing romantic attachment varied significantly across the 56 nations of the ISDP, $F(1, 55) = 20.04, p < .001$. As shown in Table 1, the five most dismissing nations were Bangladesh ($M = 4.82$), Ethiopia ($M = 4.82$), Ukraine ($M = 4.61$), Indonesia ($M = 4.45$), and Malaysia ($M = 4.41$). The five least dismissing nations were Argentina ($M = 2.46$), Japan ($M = 2.59$), Spain ($M = 2.80$), Czech Republic ($M = 2.83$), and Italy ($M = 2.86$). To aid with interpretation, the 56 nations of the ISDP are frequently categorized into 10 major world regions (see Schmitt, Alcalay, Allik, et al., 2003, 2004). Across the world regions of North America, South America, western Europe, eastern Europe, southern Europe, Middle East, Africa, Oceania, South/Southeast Asia, and East Asia, dismissing attachment varied significantly, $F(1, 9) = 48.61, p < .001$ (see Figure 1). Tukey's post hoc comparisons suggested that North American, African, Oceanic, and South/Southeast Asian samples were significantly higher in dismissing romantic attachment than samples from other world regions. South American and southern European samples were significantly lower in dismissing romantic attachment than samples from other world regions.

Evolutionary Hypothesis 1

According to Belsky and his colleagues (1991), certain social experiences should affect romantic attachment styles in evolutionary-adaptive ways. For example, people who are socially exposed to high levels of stress—especially insensitive/inconsistent parenting, harsh physical environments, and economic hardship—should tend to develop insecure romantic attachment styles associated with short-term mating (i.e., dismissing attachment; Schmitt, 2005a). Individuals from ecological contexts with lower stress, such as people from cultures with ample resources, should

Figure 1
Level of Dismissing Romantic Attachment Across 10
World Regions of the International Sexuality Description
Project (with 95% Confidence Intervals)



develop more secure romantic attachment styles associated with monogamous mating (see also Belsky, 1997, 1999; Rohner & Britner, 2002).

Low-stress indicators. One national index of low-stress and low human hardship is the Human Development Index (UNDP, 2001). Human 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. Higher scores on this index are indicative of lower cultural stress. As hypothesized, dismissing romantic attachment was negatively correlated with the Human Development Index, $r(52) = -.41$, $p < .01$ (see Table 2).

An additional index of low stress and hardship can be derived from the national level of per capita GDP. Assessments of each ISDP nation's per

Table 2
Dismissing Romantic Attachment Related to Key Cultural Variables Across the Nations of the ISDP

Cultural Variables	Overall Level of Dismissing Attachment	Gender Difference in Dismissing Attachment
Low stress indicators		
Human Development Index ($n = 54$)	-.44***	.48***
GDP per capita ($n = 54$)	-.36**	.35**
Self-esteem ($n = 55$)	-.11	.26*
Life satisfaction ($n = 29$)	-.12	.25
Level of democracy ($n = 42$)	-.17	.24
High stress indicators		
Pace of life ($n = 21$)	.43*	-.31
Average temperature ($n = 49$)	.39**	-.30*
Pathogen stress ($n = 56$)	.16	-.23*
Low mortality indicators		
Life expectancy ($n = 54$)	-.42***	.47***
High mortality indicators		
Infant mortality ($n = 54$)	.43***	-.43***
% Low birthweight ($n = 50$)	.42***	-.17
Child malnutrition Prevalence ($n = 26$)	.43***	-.27
HIV/AIDS rate ($n = 54$)	.21	-.43***
Prolific reproduction indicators		
Fertility rate ($n = 54$)	.34*	-.38**
Teenage birthrate ($n = 53$)	.47***	-.39**

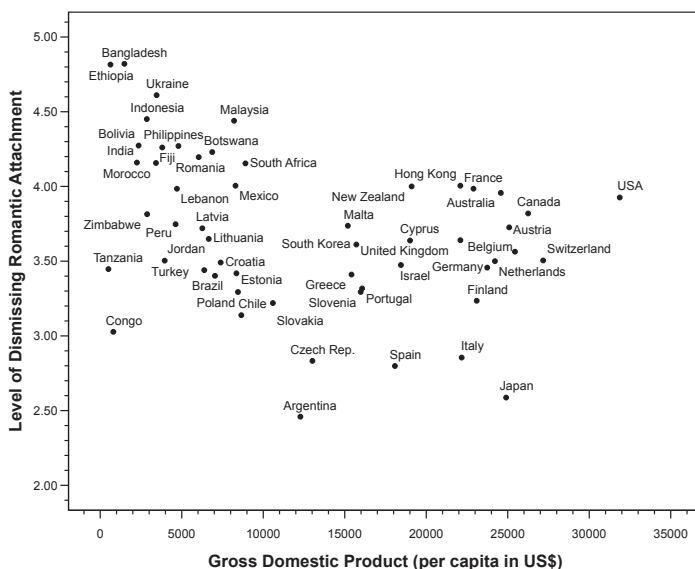
Note: ISDP = International Sexuality Description Project; GDP = Gross domestic product; HIV/AIDS = Human immunodeficiency virus/acquired immunodeficiency syndrome.

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

capita GDP (in U.S. dollars) were taken from a UN database (UNDP, 2001). Higher GDP per capita was associated with lower dismissing romantic attachment, $r(52) = -.34$, $p < .01$. These findings support the hypothesis that stressful environments (i.e., 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, Alcalay, Allik, et al., 2004). As seen in Figure 2, dismissing romantic attachment conspicuously increased once cultures fell below less than US\$10,000 per capita GDP. For cultures that have more than US\$10,000 per capita GDP, increasing resource levels did not reduce levels of dismissing romantic attachment.

Three final three indicators of *low stress* were self-esteem, life satisfaction, and level of democracy in a culture. Self-esteem was assessed in

Figure 2
Gross Domestic Product (per capita in U.S. dollars) Related to Dismissing Romantic Attachment Across 54 Nations of the International Sexuality Description Project



55 nations of the ISDP (Schmitt & Allik, 2005). The correlation between self-esteem and dismissing romantic attachment was negative, as expected, but did not reach the level of statistical significance, $r(53) = -.11$. Overall life satisfaction scores across 29 nations of the ISDP were available from Diener and Suh (1999). The correlation between life satisfaction and dismissing romantic attachment was negative, as expected, but did not reach the level of statistical significance, $r(27) = -.12$. National democracy levels were taken from van de Vliert et al. (1999). The correlation between level of democracy in a culture and dismissing romantic attachment was negative, as expected, but only reached the level of marginal significance, $r(40) = -.17, p < .10$.

High stress indicators. Levine and Norenzayan (1999) examined the pace of life across 21 nations that were included in the ISDP. Higher levels of pace of life are associated with time urgency, an indicator of psychological

stress (Friedman & Rosenman, 1974; Glass, Snyder, & Hollin, 1974), whereas nations with lower pace of life levels tend to experience less stress. As shown in Table 2, the correlation between pace of life and dismissing romantic attachment was positive, $r(19) = .43, p < .05$. Average temperature has been linked to higher rates of stress and violence across cultures (van de Vliert et al., 1999). As shown in Table 2, the correlation between average temperature and dismissing romantic attachment was significant in the positive direction, $r(47) = .39, p < .01$. Pathogen stress is a direct index of ecological stress (Gangestad & Buss, 1993; Low, 1990). As shown in Table 2, the correlation between pathogen stress and dismissing romantic attachment was positive but not significant, $r(54) = .16$.

Evolutionary Hypothesis 2

According to Chisholm (1996, 1999), in cultures with higher mortality the optimal mating strategy is to reproduce early and often, a strategy related to high fertility rates and possibly linked to developing the dismissing form of insecure attachment.

Low mortality indicator. The index of low mortality used in the study was life expectancy. As expected, national life expectancies were negatively related to national levels of dismissing attachment, $r(52) = -.42, p < .001$. Thus, in cultures with lower levels of mortality, the dismissing form of romantic attachment is significantly higher.

High mortality indicators. As expected, national indicators of *high mortality* were all positively related to national levels of dismissing romantic attachment. This included infant mortality, $r(52) = .43, p < .001$, percentage of low birthweight infants, $r(48) = .42, p < .001$, and child malnutrition prevalence, $r(24) = .43, p < .001$. Another index of mortality was the level of HIV/AIDS across cultures (UNDP, 2001; scores were not available for Serbia or Taiwan). The correlation between HIV/AIDS and dismissing romantic attachment was positive but not significant, $r(32) = .21$.

Prolific reproduction indicators. Based on 54 national fertility rates provided by the United Nations (UNDP, 2001), those nations with higher fertility rates tended to have higher levels of dismissing romantic attachment, $r(52) = .34, p < .05$. Teenage birthrate is an index of early reproduction as a mating strategy. As predicted, higher rates of teenage births were significantly associated with higher levels of dismissing romantic attachment,

$r(51) = .47, p < .001$. Thus, insecure romantic attachment was associated with earlier and more prolific reproduction across cultures, supporting evolutionary hypothesis 2.

Evolutionary Hypothesis 3

Listed along the right side of Table 1 are the effect sizes (d) of the gender difference in dismissing romantic attachment across the 56 nations of the ISDP. The d statistic represents the size of the difference between men's and women's means expressed in pooled standard deviation units (Cohen, 1988). Many of these differences approached a moderate magnitude of effect, similar to previous research findings (Bartholomew & Horowitz, 1991). However, most gender differences observed in the ISDP were only small in magnitude (around $d = .20$). A few cultures possessed the opposite of the predicted pattern, with women slightly more dismissive in attachment than men (e.g., Ethiopia, Tanzania, and Botswana). Overall, these findings lead to the tentative conclusion that greater male dismissiveness is a *near universal* of human nature (Brown, 1991), but that some features of culture seem to attenuate its expression.

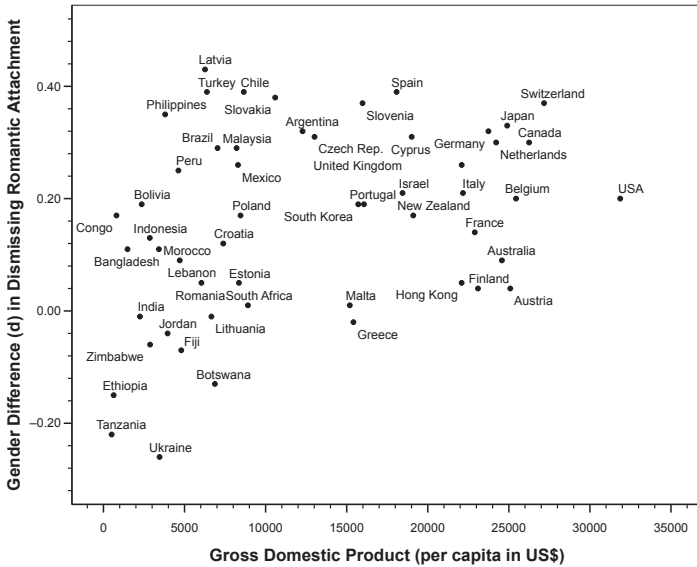
Evolutionary Hypothesis 4

The hypothesis stated that gender differences in dismissing romantic attachment should be smaller in cultures with high-stress environments. As seen down the right side of Table 2, in most cases indexes of low stress were associated with larger gender differences in dismissing attachment, whereas indicators of high stress were associated with smaller gender differences in dismissing attachment. For example, GDP per capita (i.e., low stress) was positively correlated with the difference between men's and women's levels of dismissing attachment, $r(52) = .35, p < .01$ (see Figure 3). In contrast, in nations with higher pathogen stress (i.e., high stress), the difference between men's and women's dismissing romantic attachment was lower, $r(54) = -.23, p < .05$.

Evolutionary Hypothesis 5

This hypothesis stated that gender differences in dismissing romantic attachment should be lower in cultures with higher mortality and higher fertility rates. Gender differences in dismissing romantic attachment were negatively related to indicators of high mortality (see Table 2). For example, as

Figure 3
Gross Domestic Product (per capita in U.S. dollars)
Related to Gender Differences (*d*) in Dismissing Romantic
Attachment Across 54 Nations of the International
Sexuality Description Project



HIV/AIDS rates increased, gender differences in dismissing romantic attachment decreased, $r(52) = -.43, p < .001$. The magnitude of gender differences was also related to indicators of more prolific reproduction, including national fertility rates, $r(52) = -.38, p < .01$, and national teen birthrates, $r(51) = -.39, p < .01$. These findings strongly confirm the evolutionary hypothesis 5 in that cultures with higher mortality and fertility levels tended to have reduced differences between men's and women's dismissing romantic attachment levels.

Discussion

Historically, social scientists have conceived of culture as the transmission and sharing of patterns of human cognition, emotion, and behavior. For

most cross-cultural psychologists, culture is also viewed as a prospective explanatory force, a first-cause. Culture exists, and then human psychology results. Several serious problems exist with this standard view of culture (Gangestad et al., 2006; Tooby & Cosmides, 1992). First, there are definitional and circularity issues. Cultures cause the sharing of human psychology, but cultures *are* the sharing of human psychology. Second, not all people within a culture share the same features of human psychology. Variations within cultures along the dimensions of sex, age, and status should lead to skepticism about the legitimacy of culture as a sole causal force. Third, all cultures change over time. Without *mechanisms* for explaining why cultures change, any theory of culture and its influence on human psychology are necessarily incomplete (Cronk, 1999; Ross, 2004).

Evolutionary Psychology and Romantic Attachment Across Cultures

Evolutionary psychologists have suggested several such mechanisms. For example, evolutionary theorists have hypothesized that all human beings possess attachment mechanisms—evolved psychological adaptations—that respond to features of local ecology in ways that reliably result in within-culture and between-culture differences in attachment and human mating (e.g., Belsky et al., 1991; Chisholm, 1996). According to these theories, early social experiences adaptively channel children down one of two reproductive pathways. Individuals socially exposed to high levels of stress, such as people from low human development cultures, tend to develop dismissing attachment styles. Individuals from social contexts with lower ecological stress, such as people from cultures with ample resources, develop more secure attachment styles. Of particular interest was the finding of US\$10,000 per capita GDP serving as a threshold, below which decreasing resources led to conspicuous increases in dismissing attachment. Above that threshold, increasing resources did not less dismissing attachment, a finding possibly related to increases in materialistic values and emotional distancing that accompany accumulated wealth (Kashdan & Breen, 2007).

The current findings also documented that nations with longer life expectancies tend to have lower levels of dismissing attachment. However, nations possessing higher fertility rates have higher levels of dismissing attachment. Through postulating psychological adaptations specially designed to respond to local ecology and related indicators, evolutionary psychologists have provided much-needed mechanisms for explaining cultural variability (see also Pasternak, Ember, & Ember, 1997).

Evolutionary Psychology and Gender Differences Across Cultures

According to the present ISDP findings, gender differences in dismissing romantic attachment are only a *near universal* of human culture. In Western cultures, previous research had profiled men as significantly more dismissing than women (e.g., Bartholomew & Horowitz, 1991). This general trend was found among the ISDP's Western cultures as well, but it was also revealed that in non-Western cultures men are sometimes only slightly more dismissive than women. In some African and Oceanic cultures—including Ethiopia, Tanzania, Botswana, Zimbabwe, and Fiji—women were just as dismissing as men. These findings seem to run counter to the expectations of evolutionary psychology which predicted gender differences in dismissing romantic attachment should be culturally universal. Still, most cultures displayed small-to-moderate gender differences in dismissing romantic attachment, suggesting that greater male dismissiveness is a near universal of human psychology (Brown, 1991). Consequently, the current research focused on understanding what psychological adaptations might be designed to respond to culture in ways that accentuate or attenuate gender differences in dismissiveness.

Evolutionary psychological theories of romantic attachment and human mating (Belsky et al., 1991; Chisholm, 1996; Gangestad & Simpson, 2000) suggest that in cultures where environmental and reproductive stressors are relatively high, women should tend to engage in more short-term mating, and presumably women should tend to develop more dismissing romantic attachment orientations (Kirkpatrick, 1998). In the ISDP, short-term mating is associated with high levels of dismissing attachment (Schmitt, 2005a). In combination with men's preferential tendency toward dismissing romantic attachment and short-term mating in general (Schmitt, Alcalay, Allensworth, et al., 2003; Schmitt, Alcalay, Allik, et al., 2003), this led to the expectation that men's and women's dismissing attachment orientations will converge and become more similar in cultures with high-stress ecological environments. This study confirmed that in cultures with high-stress and high fertility rates, gender differences in dismissing attachment are attenuated, presumably because women become more similar to men in short-term mating tendencies and express concomitantly higher levels of dismissing romantic attachment. Again, evolutionary perspectives have provided the mechanisms—psychological adaptations—through which cultures differ and can change in the future (Schmitt & Pilcher, 2004).

Limitations and Future Research Directions

The findings reported here are, in some ways, rather limited. First, the variables used to test evolutionary perspectives on attachment were only indirect measures of the constructs most central to attachment theory. For example, stress and mortality were represented by UN data on such variables as *human development* and *child malnutrition*. Although these variables certainly reflect some degree of stress, they are not direct measures of *familial stress*—the primary causal force behind the mechanisms postulated by attachment theory (Bowlby, 1969). The current variables are only cultural averages that may have little to do with an individual participant's family history and local ecological stress. Future research testing these theories within families across multiple cultures, and directly assessing local ecological conditions, would more directly test the basic premises of the current evolutionary perspectives on human attachment and mating strategies.

Second, the reliance on self-report was a limitation. Even with guarantees of anonymity in the ISDP, the cross-cultural nature of ISDP surveys raises questions about response veridicality (Brislin, 1980; Triandis, 1994). Any observed cultural differences may be the result of not only a real cultural disparity on attachment but also inappropriate translations, biased sampling, or the nonidentical response styles prevalent across cultures (Diener & Suh, 1999; van de Vijver & Leung, 2000).

Concerns over sampling raise the additional issue of generalizability. The convenience sampling techniques utilized in the ISDP seriously limit the representativeness of our national attachment profiles. Because the ISDP samples were primarily college students, any generalizations beyond college-aged populations would be inappropriate. On the other hand, because all nations were represented by college-aged samples, any differences between samples will tend to elucidate the effects of culture and not other age-related demographic confounds. Ultimately, future research taking factors such as sampling and response biases into account will be needed to fully verify the psychometric value of nation-level scores on the RQ.

Another limitation involves the representativeness of high-stress cultures. For example, in the ISDP samples from Africa, most participants were college students. Unlike many Western cultures, college students are rather unrepresentative of national African populations. Indeed, African students from Botswana, the Democratic Republic of the Congo, Ethiopia, and Zimbabwe may constitute a subportion of their cultures that is especially exempt from high rates of ecological stressors. Future research in which truly representative samples from a wider range of high-stress cultures will help to more accurately relate UN databases of stress to large-scale anonymous sex surveys.

Finally, this study is typical of large-scale cross-cultural psychology research in that it suffers from Galton's problem (Denton, 2007; Dow, 2007). That is, many of the ISDP nations are closely related culturally, linguistically, and politically. For instance, the ISDP contains a heavy sampling of European nations, especially those from the former Soviet Union. To evaluate fairly the influence of ecological stress on romantic attachment, a more representative sampling of cultures is needed. Future research that also includes systematic sampling of foraging, horticultural, and agricultural cultures (e.g., Quinlan & Quinlan, 2007; Walker et al., 2006) would be needed before cross-cultural researchers can conclude that nation-level indicators of stress are definitively linked to nation-level romantic attachment styles.

Notes

1. Belsky (1999) also provides a model of parent-child attachment insecurity adaptively leading to preoccupied attachment, but that will not be the focus of this article.

2. The mean scores presented in Table 1 have been previously reported in Schmitt, Alcalay, Allensworth, et al. (2004) and the gender differences presented in Table 1 have been previously reported in Schmitt, Alcalay, Allensworth, et al. (2003).

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