Journal of Personality and Social Psychology
2009, Vol. 97, No. 1, 171–185

© 2009 American Psychological Association
0022-3514/09/$12.00 DOI: 10.1037/a0015546

Cross-National Variation in the Size of Sex Differences in Values: Effects of Gender Equality

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How does gender equality relate to men's and women's value priorities? It is hypothesized that, for both sexes, the importance of benevolence, universalism, stimulation, hedonism, and self-direction values increases with greater gender equality, whereas the importance of power, achievement, security, and tradition values decreases. Of particular relevance to the present study, increased gender equality should also permit both sexes to pursue more freely the values they inherently care about more. Drawing on evolutionary and role theories, the authors postulate that women inherently value benevolence and universalism more than men do, whereas men inherently value power, achievement, and stimulation more than women do. Thus, as gender equality increases, sex differences in these values should increase, whereas sex differences in other values should not be affected by increases in gender equality. Studies of 25 representative national samples and of students from 68 countries confirmed the hypotheses except for tradition values. Implications for cross-cultural research on sex differences in values and traits are discussed.

Keywords: values, sex differences, gender equality, national differences

Does societal gender equality influence the relative importance that women as opposed to men attribute to independence, helpfulness, power, or obedience? Does gender equality affect the size of sex differences in such basic human values?[1] In this study, we reexamine sex differences in value priorities across countries and assess relations of value priorities to gender equality. We then turn to the study's central focus, identifying and explaining cross-national variation in the magnitude of sex differences in 10 basic human values.

To this end, we adopt the approach to values elaborated by Schwartz (1992). He defined basic values as broad, transsituational goals that vary in importance as guiding principles in life. The crucial content aspect differentiating among values is the motivational goals they express. Table 1 presents each of 10 basic values Schwartz distinguished, its defining motivational goal, and exemplary items used to measure it. Research in more than 75 countries supports the discrimination of these 10 values and provides evidence of their predicted associations with numerous attitudes, behaviors, and personality traits (summarized in Schwartz, 2006b).

A study of 127 samples from 70 countries found consistent cross-cultural sex differences for 7 of the 10 basic human values (Schwartz & Rubel, 2005). Men attributed more importance than women did to power, stimulation, hedonism, achievement, and self-direction values. Women attributed more importance than men did to benevolence and universalism values. Less consistently, women attributed more importance to security values, but there was no consistent sex difference for tradition and conformity values.

Despite the consistency of sex differences across countries, the average effect size was small, usually less than .2. However, this small average effect size obscured substantial variation across countries. For example, the effect size ranged from .70 in Ethiopia (women higher) to −.78 in Austria for conformity values and from .59 in Finland to −.64 in Ethiopia for universalism values (see Appendix D in Schwartz & Rubel, 2005). Apparently, societal characteristics influence the size and direction of sex differences in the importance of values.

For 19 European countries, Schwartz and Rubel (2005) reported that the greater the social, health, and employment equality of women and men in a country (Population Crisis Committee, 1988), the larger the sex differences in power and benevolence values. Surprisingly, in countries with greater gender equality (e.g., Finland), men attributed substantially more importance to power values but substantially less importance to benevolence values than women did. In countries with less gender equality (e.g., Greece), these sex differences were relatively small. It is interesting that similar findings have been reported for other aspects of personality: Sex differences in certain traits (Costa, Terracciano, & McCrae, 2001) and aspects of emotional experience (Fischer &

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Israel Science Foundation Grant No. 921/02 to Shalom H. Schwartz supported this research.

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[1] We use the terms *sex differences* and *sex effects* to describe the results of comparing people grouped into female and male categories. The term *gender* refers to the meanings ascribed to these female and male categories. However, we use *gender* when we present views and findings from publications that used this term.

Table 1
Ten Basic Values in the Schwartz (1992) Model

Value	Defining motivational goal	Exemplary items
Power	Social status and prestige, control or dominance over people and resources	Authority, wealth, controlling others, social power
Achievement	Personal success through demonstrating competence according to social standards	Success, ambition, and admiration for one's abilities
Hedonism	Pleasure, sensuous gratification	Pleasure, enjoying life, fun, spoiling oneself
Stimulation	Excitement, novelty, and challenge in life	Exciting life, adventure, risk, daring
Self-direction	Independent thought and action—choosing, creating, exploring	Creativity, freedom, independence, curiosity
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of *all* people and nature	Social justice, equality, wisdom, world peace, protecting the environment
Benevolence	Preservation and enhancement of the welfare of people with whom one is close	Helpful, caring, loyal, supportive
Tradition	Respect, commitment and acceptance of traditional and religious customs and ideas	Respect for tradition, humility, devoutness, modesty
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others or violate social norms	Following rules, obedience, honoring parents and elders
Security	Safety, harmony, and stability of society, relationships, and self	Family security, social order, cleanliness, avoiding danger

Manstead, 2000) were larger in countries with greater gender equality.

Does this unexpected pattern found for power and benevolence values, personality traits, and emotions hold for all 10 values? Schwartz and Rubel (2005) did not report associations of sex differences with gender equality for the other 8 values. They noted only that the sex difference in one value, self-direction, was no larger in more wealthy and autonomous European countries than in less wealthy and autonomous European countries.

To understand variation in the size of sex differences in values, we first consider probable effects of gender equality on the importance of each value for both women and men. Gender equality correlates highly with other societal characteristics known to affect men's and women's value priorities: country wealth (.84; gross national product per capita), democracy (.64), and cultural autonomy (.66) across 68 countries.[2] Correlations of these country characteristics with value priorities (Schwartz & Sagie, 2000) lead us to expect gender equality to relate positively with benevolence, universalism, self-direction, stimulation, and hedonism values and negatively with security, tradition, conformity, power, and achievement values. Greater wealth, individual freedom, and cultural autonomy make it easier to pursue values like self-direction and hedonism successfully, and they make it less necessary to pursue anxiety-based values like power, security, and conformity (Schwartz, 2006b, 2007a).

These associations of gender equality with values are in the same direction for men and women. However, the associations may be stronger for some values for men and stronger for others for women. This would lead to divergence between the sexes in value priorities. If a certain value is inherently more important to one sex, its importance would increase more sharply for that sex as changing societal conditions facilitated its expression and pursuit. The facilitating conditions would enable those for whom that value is inherently more important to express it more freely. For example, assume that universalism values are likely to be inherently more important for women than for men. If so, increased social expectations and opportunities to take part in civil rights movements and reduced social constraints against doing so will give rise to an increase in the importance of universalism for both sexes, but the increase should be sharper for women than for men.

Conversely, as societal conditions discourage and constrain the pursuit and expression of a value, its importance would decrease more slowly for the sex to which it is inherently more important. Members of the relevant sex are more likely to resist pressures to relinquish it. For example, assume that power values are inherently more important for men than for women. If so, increased sanctions and constraints against pursuing self-interest at others' expense will give rise to a decrease in the importance of power values for both sexes, but the decrease will be smaller among men than among women.

Some values may not be inherently more important to one or the other sex. As societal conditions change to encourage or discourage the expression and pursuit of these values, we expect similar rates of increase or decrease in their importance to both sexes. We next explicate why particular values may be more important inherently to women or to men.

Identifying Values Likely to be Inherently Important to Women or Men

To identify the values likely to be inherently more important to one or the other sex, we draw on two sources, evolutionary psychology and social role theory. Evolutionary psychology argues that the adaptive problems humans' ancestors faced gave rise to fundamental psychological goals that guide contemporary human cognition and behavior within specific life domains (Kenrick et al., 2002). Values are, in part, expressions of these fundamental goals. The two sexes faced different adaptive problems and devel-

[2] The cultural autonomy index is a factor score based on the loadings of the Schwartz (2004, 2006b) culture dimensions of autonomy/embeddedness and egalitarianism/hierarchy and the Inglehart and Baker (2000) dimension of survival/self-expression.

oped different cognitive and affective mechanisms in two domains in particular, mating and reproduction. In other domains, they faced largely similar adaptive problems. This reasoning suggests that particular valued goals are likely to be inherently more important to one or the other sex. From social role theory, we consider the biological and physical features that presumably give rise to prevalent gender differences in role allocation and expectations. Especially important are the differences between women's and men's functions in reproduction and in their size and strength (Wood & Eagly, 2002).

For some values, social role theory and evolutionary approaches provide complementary bases for inferring that values are inherently more important to one sex. For other values, only one approach is relevant. The following sections specify the values likely to be inherently more important to men or to women. The rationales draw on either evolutionary psychology or social role theory or both, according to their relevance. The rationales relate the approaches to the motivational goals of the values (see Table 1).

Power, Achievement, and Stimulation Values: Inherently Male?

Power and *achievement* are values likely to be inherently more important to men, according to both approaches. The defining goal of power values is to attain and protect status, prestige, and dominance over people and resources (Schwartz, 1992). The defining goal of achievement values is personal success through the demonstration of competence according to social standards. Power and achievement values share the motivation of enhancing personal interests.

Evolutionary analyses (e.g., Davies & Shackelford, 2008) note that women had to invest more than men in parenting. To avoid wasting their investment, women sought mates who could contribute resources to raising their child, helping the child to reach reproductive age. Women used men's status as a cue for mate selection because dominant, high-status men typically controlled more resources. Consequently, to enhance their success in competing for mates (Kenrick et al., 2002), status seeking became a central psychological goal for men. Thus, the pursuit of power and achievement became inherently more important for men than for women. Supporting these arguments, research shows that women rate attributes associated with power and achievement (e.g., rank, ambition) as more desirable in a mate than men do, men more frequently use tactics to attract mates that involve displaying these attributes, and men derogate rivals as lacking these attributes (e.g., Buss & Schmitt, 1993, 1996).

The social role perspective (Wood & Eagly, 2002) points to the interaction of the demands of the socioeconomic and ecological systems with men's higher testosterone levels and larger physical size. This interaction may account for men's predominance across cultures in occupations that enjoy more power and status (Whyte, 1978). Their biological and physical characteristics may incline men to seek power and achievement in the labor market and hence to value them more than women do.

The inherently greater importance of these two values for men implies that men will relinquish them more slowly than women will when social conditions provide less justification for their expression. The increasing wealth and autonomy that accompany greater gender equality weaken the justification for pursuing power and achievement.

Stimulation values may also be inherently more important to men than to women. With their defining goal of excitement, novelty, and challenge in life, they motivate risk taking. Evolutionary psychology suggests that men are inherently more inclined to take risks than women are. It argues that competition among men for mates is greater than competition among women because it offers men greater reproductive gains from winning and a greater likelihood of total reproductive failure from losing (Daly & Wilson, 2001). Pursuing success in this competition is likely to have produced sexual selection pressures for men to evolve a psychology that makes them more willing than women to undertake risks (Davies & Shackelford, 2008). Supporting these arguments is evidence that, compared with women, men take more risks (Byrnes, Miller, & Schafer, 1999), have higher rates of death in accidents (e.g., Holinger, 1987; Wilson & Daly, 1997), and more frequently engage in substance abuse (e.g., Irwin, Igra, Eyre, & Millstein, 1997). The increasing wealth and autonomy that accompany greater gender equality facilitate the pursuit of stimulation. They should lead to a sharper increase in the importance of stimulation values among men than among women.

Benevolence and Universalism Values: Inherently Female?

Benevolence values motivate people to preserve and enhance the welfare of close others. Benevolence values apply most critically to relations within the family. Evolutionary reasoning suggests that women will seek to maximize the return on their large initial parental investment by evolving goals of caring for their children's welfare. Hence, it is more crucial for women than for men to promote supportive family relations that create an environment that enables their child to reach reproductive age. Moreover, it is more important to women to maintain long-term relationships, and women are less willing than men to engage in short-term affairs (Davies & Shackelford, 2008). Social role theory attributes women's central role in caring for family members largely to their ability to gestate. Their role in reproduction and caring gives them more direct experience as nurturers (Valian, 1998). In virtually all contemporary societies, women continue to have primary responsibility for childbearing and nursing; care for children, the sick, and older people; and running the home (Georgas, Berry, van de Vijver, Kağitçibaşi, & Poortinga, 2006). Together, women's roles, their experiences, and their adaptive gain from caring for close others may make benevolence values inherently more important to women than to men.

Universalism values have as their goal understanding, appreciation, tolerance, and protection for the welfare of *all* people and for nature. Like benevolence values, they entail transcending selfish interests for the sake of others. The inherently greater importance of benevolence values to women than to men may also generalize to universalism values because universalism values emerge through the extension of benevolence values beyond the in-group to the wider society. According to the theory of basic values, self-transcendence (benevolence and universalism) and self-enhancement (power and achievement) values are motivationally opposed (Schwartz, 1992). That is, it is difficult to pursue both of them simultaneously. Consequently, emphasizing one leads to

deemphasizing the other. The motivational conflict between these two types of values may amplify any inherent sex difference for both. Thus, gender equality should increase the importance of benevolence and universalism values for both sexes, but the increase should be sharper for women than for men.

Security, Conformity, Tradition, Self-Direction, and Hedonism: No Inherent Sex Difference?

Three values—security, conformity and tradition—share an underlying motivation to avoid threats and anxiety and to preserve the status quo (Schwartz, 1992, 2006b). We posit no inherent sex differences in these values.

The goal of *security* values is safety; harmony; and stability of society, relationships, and the self. Evolutionary reasoning suggests that both sexes develop psychological mechanisms that motivate vigilant avoidance of whatever poses threats to health or survival (Kenrick et al., 2002). The self-protective motivation that security values express is therefore equally relevant to both sexes. Because self-protection is critical in all social roles, social role theory also implies no inherent association of security values with one or the other sex.

The goal of *conformity* values is restraint of actions, inclinations, and impulses likely to upset or harm others or to violate social expectations or norms in everyday interaction. The goal of *tradition* values is respect, commitment, and acceptance of customs and ideas imposed by one's culture or religion. Both types of values derive from the need to inhibit behavior that might disrupt social relations and undermine group solidarity.

Conformity and tradition values may serve the evolutionary goal of building and maintaining coalitions. Coalitional bonds promote cooperation and mutual assistance in times of need and contribute significantly to reproductive fitness (Kenrick et al., 2002). Coalitions were useful to men for hunting, warfare, and defense and to women for food gathering, child care, and homemaking. Inhibiting disruptive impulses and violations of expectations would be critical for maintaining effective coalitions for both men and women. Adhering to the customs and traditions that symbolize and ensure group solidarity would strengthen coalitions for both women and men. Any system of social roles, whether predominantly the domain of men or the domain of women, functions more smoothly and benefits if its occupants value conformity and tradition. This helps to avoid conflict within the group and to maintain accepted practices and beliefs. Thus, neither evolutionary psychology nor social role theory imply that the importance of conformity and tradition values is inherently greater for women or for men.

The goal of *self-direction* values is independent thought and action—choosing, creating, exploring. Self-direction values are a transformation of individual needs for control and mastery (e.g., Bandura, 1977) and for some independence and autonomy in interaction (e.g., Kluckhohn, 1951, in Schwartz, 1992). Both women and men have these needs. From an evolutionary perspective, exercising some independence, creativity, and exploration were requisites for success both in men's hunting, warfare, and defense activities and in women's food gathering and efforts to attract an appropriate mate. They are also requisites for men and women to succeed in such currently gender-differentiated occupational roles as engineering and elementary school teaching. Given the relevance of self-direction to both men and women, from both evolutionary and social role perspectives, we see no reason to posit that the importance of self-direction values is inherently different for men and women.

The goal of *hedonism* values is pleasure, fun, and enjoyment in life. Men and women may seek enjoyment in different activities, but we find no grounds to assume that the basic goal is inherently more important to one or the other sex. Both sexes may find pleasure in socializing, sports, eating, drinking, and the like, and women enjoy sex just as much as men do (Baumeister, Catanese, & Vohs, 2001). Hedonism values and the items that measure them refer to the full range of activities in which women and men engage to find pleasure in life. Thus, neither social role differences nor evolutionary adaptations suggest that the importance of hedonism values is inherently greater for men or for women.

The above analyses suggest that security, conformity, tradition, self-direction, and hedonism values are inherently no more important for either sex. Therefore, although increasing gender equality gives women and men more freedom to pursue the values they inherently care about, it should not increase the size of sex differences in the importance of these values. Indeed, a social role perspective suggests that increasing gender equality might lead to smaller sex differences in these values because gender role expectations and experiences become less differentiated.

Hypotheses

We tested six hypotheses. Hypotheses 1 and 2 specify effects of societal gender equality on the overall importance of the 10 values for women and men. The hypotheses are based on the assumption that greater gender equality and societal characteristics associated with it facilitate and encourage the pursuit of some values (Hypothesis 1) and discourage and constrain the pursuit of others (Hypothesis 2). Hypotheses 3, 4, 5 and 6 specify the effects of societal gender equality on the size of sex differences in the importance of the 10 values. They are based on the inherent relations of sex with the importance of particular values that we postulate.

Hypothesis 1: The importance of benevolence, universalism, self-direction, stimulation, and hedonism values is associated with higher societal gender equality.

Hypothesis 2: The importance of power, achievement, security, conformity, and tradition values is associated with lower societal gender equality.

Hypothesis 3: For benevolence and universalism values, whose importance we propose is inherently greater for women, the association with gender equality is more positive for women than for men. This produces larger sex differences with greater gender equality (divergence).

Hypothesis 4: For power and achievement values, whose importance we propose is inherently greater for men, the association with gender equality is less negative for men than for women. This produces larger sex differences with greater gender equality (divergence).

Hypothesis 5: For stimulation values, whose importance we propose is inherently greater for men, the association with

gender equality is more positive for men than for women. This too produces larger sex differences with greater gender equality (divergence).

Hypothesis 6: For conformity, security, tradition, self-direction, and hedonism values, whose importance we propose is not inherently greater for men or women, gender equality is unrelated to sex differences or, possibly, negatively related (convergence).

We tested the hypotheses separately in representative national samples and in university student samples. Representative samples allow maximum generalization; students reduce possible confounding influences that could distort national differences because students share many background characteristics. Findings are unlikely to be biased by the selection of countries because the countries cover the whole continuum of social structural and cultural dimensions.

Method

Samples and Procedure

Study 1. Strict probability samples, representing the population 15 years and older in each of 25 countries, were taken from the European Social Survey (ESS), 19 from Round 1 (2002–2003) and five more from Round 2 (2003–2004). The countries included Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Israel, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and Ukraine. Further, we treated West Germany and East Germany as separate cultural units because distinct country-level characteristics are available for each. The data were taken from Web site http://ess.nsd.uib.no and cleaned as reported below.

Study 2. University and college students from 68 countries (118 samples) participated between 1988 and 2005.[3] We combined multiple samples from the same country and treated East and West Germany as separate units. The 68 countries, listed in Appendix A, represent much of the cultural diversity of literate human societies. Appendix A also lists the number of men and women in each sample (Study 1 total $N = 42{,}355$;[4] Study 2 total $N = 25{,}968$).

Value Instruments

Study 1. Respondents completed a version of the Portrait Values Questionnaire (PVQ; Schwartz, Melech, Lehmann, Burgess, & Harris. 2001) shortened and revised for the ESS (Schwartz, 2007b; Schwartz & Rubel, 2005). This version includes verbal portraits of 21 different people, gender matched with the respondent. Each portrait describes a person's goals, aspirations, or wishes that point implicitly to the importance of a value. For example, "It is very important to him to help the people around him. He wants to care for their well-being" describes a person who cherishes benevolence values. The 21 items are listed in Appendix B.

For each portrait, respondents answer the question "How much like you is this person?" on a 6-point labeled scale ranging from 1 = *not like me at all* to 6 = *very much like me*. The importance of a value is the mean response to the items that measure it. Thus, we infer respondents' own values from their self-reported similarity to people described implicitly in terms of values. Internal reliabilities of the values are necessarily low because the two items that measure each value (3 for universalism) are intended to cover the conceptual breadth of the value rather than a core idea. Alpha averaged .58, ranging from .37 (tradition) to .70 (achievement).

Despite low reliabilities, hypothesized associations of these value scores support their validity. Across numerous countries, they correlated with voluntary memberships, political activism, immigration attitudes, social involvement, and interpersonal trust (Schwartz, 2007b). Even tradition, whose reliability is lowest, correlates predictably with education, age, religiosity, interest in politics, and rejection of homosexuality (all ps $< .0001$). Moreover, the 21 items form the prototypical, motivational structure of 10 values in a multidimensional scaling analysis (Davidov, Schmidt, & Schwartz, 2008; Schwartz, 2007b).

Study 2. Respondents completed the Schwartz Value Survey (SVS; Schwartz, 1992) that presents two lists of abstract value items. Each item expresses the motivational goal of one of the 10 values (see Table 1). An explanatory phrase following each item further specifies its meaning. For example, "FREEDOM (freedom of action and thought)" is a self-direction item. Respondents rate each item "as a guiding principle in MY life" on a 9-point scale ranging from 7 = *of supreme importance* through 0 = *not important* to −1 = *opposed to my values*. Samples responded either to the 56-item SVS or to the revised 57-item SVS (Schwartz, 1992, 2006b).

The items used to index each value were those designated a priori as markers that also demonstrated near-equivalent meanings in studies in 67 countries (Schwartz, 1992, 2006b). Three to five items indexed each value (except eight for universalism). Alpha averaged .67, ranging from .55 (self-direction) to .74 (universalism).

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[3] We thank the many people who gathered the Study 2 data as part of a project organized by Shalom H. Schwartz: Charity Akotia, Hasan Bacanli, Krassimira Baytchinska, Gabriel Bianchi, Marim Bilalic, Klaus Boehnke, Engelina Bonang, Michael Bond, Bartolo Campos, M. Martina Casullo, Patrick Chiroro, Renee Mayorga Chavez, Jose Luis Cossio, Kenneth Dion, Karen Dion, J.-B. Dupont, Norman Feather, Johnny Fontaine, Kathy Frost, Adrian Furnham, Wei-Zhi Gang, Francis Gendre, James Georgas, Rosalba Giacopino, Hector Grad, Andreas Gronningsaeter, Aydan Gulerce, Hidekazu Hakoi, Beatrice Hammer, Gyu-seog Han, Judy Howard, Sipke Huismans, Sumiko Iwao, Maria Jarymowicz, Jordana Jovanovic, David Karp, Uichol Kim, Goran Knezevic, Alexandre Kurc, Dan Landes, Nadezhda Lebedeva, Mei-Chi Li, Isabel Menezes, Paulo Mercado, Gerold Mikula, Kyrre Moen, Mesfin Samuel Mulato, John Munene, Regmi Murari, Kathleen Myambo, George Nidharadze, Toomas Niit, 'Sola Olowu, Michalis Papadopoulos, Darja Piciga, Deepa Punetha, Joseph Puyat, Mark Radford, Sonia Roccas, Maria Ros, Viera Rozova, Jose Saiz, Jose Miguel Salazar, Aliou Sall, Manfred Schmitt, Loraine Scholtz, Shalom Schwartz, Renuka Sethi, Carlos Sousa, Dario Spini, Jan Srnec, Silvia Susnijc, B. James Starr, Osamu Takagi, Alvaro Tamayo, Giancarlo Tanucci, Ilina Todorova, Harry Triandis, Shripati Uphadhyaya, Zsuzsa Vajda, Erika van der Watern, Markku Verkasalo, Monique Wach, Colleen Ward, Marie Wissing, Roderick Fulata Zimba, and two others whose names we are not free to reveal.

[4] Numbers of men and women in some countries differ from those in Schwartz and Rubel (2005) because we used a later data set (Jowell & the Central Co-ordinating Team, European Social Survey 2002/2003, 2003).

Correcting scale use. In both studies, we excluded respondents who skipped more than 30% of the items or who used the same point on the response scale for more than 80% of the items, thereby discriminating little among values. We also centered each person's responses on his or her own mean for all items to eliminate individual differences in the use of the response scale (Schwartz, 1992, 2006b; Schwartz & Rubel, 2005). This converts absolute scores into value *priorities* that indicate the relative importance of each value to the person.[5]

Meaning equivalence. For valid comparison of men's and women's values across countries, the values should have similar meanings across sexes and cultures. Multidimensional scaling analyses of SVS data gathered in 15 languages showed that this was so for adult and student women and men in 21 countries from eight cultural regions (Struch, Schwartz, & van der Kloot, 2002). Multidimensional scaling and multigroup confirmatory factor analyses of the values measured with the PVQ in 19 representative European samples and a multigroup confirmatory factor analysis of the values measured with the SVS across 15 adult samples supported the near equivalence of meaning of the values across both sex and culture for both instruments (Schwartz & Rubel, 2005).

Gender Equality

Where available, we preferred country characteristics that predated the value scores because values are largely acquired prior to the age of 18 years (Grusec & Kuczynski, 2001). Two indicators directly measured societal gender equality. The Population Crisis Committee (1988) index of gender equality for the 1980s averages women's health, education, employment, and social equality. Prescott-Allen's (2001) index of gender equity for the mid- to late 1990s measures male–female differences in income, education, and representation in the national parliament. We measured gender equality in role opportunities indirectly with average family size in 1985, reversed (Encyclopedia Britannica, 1987). Childbearing and child rearing keep women home less in smaller families, so they can devote more time to extrafamilial activity. In a factor analysis in each study, all three indicators loaded more than .89 on a single factor. We therefore used the factor scores, computed separately for each study, to derive a more reliable index of gender equality. Appendix A provides the scores for each country for each study.

Analyses

Sex and values are individual level variables, whereas gender equality is a characteristic of the countries in which individuals are nested. We therefore used hierarchical linear modeling (HLM) to test the hypotheses (Raudenbush & Bryk, 2002). At the individual level, respondent sex predicted value importance, yielding a coefficient for the sex effect on each value across countries (i.e., the *sex slope*). In Study 1, we controlled effects of age and education because they vary substantially in representative samples. At the country level, gender equality predicted both mean country value importance and the size and direction of sex effects on values, that is, the sex slopes within countries.

Results

Values Expected to Show Divergent Sex Effects With Greater Gender Equality

Table 2 reports the HLM coefficients for the five values hypothesized to show larger sex differences the greater the gender equality in a country (divergence). The top portion presents results for Study 1 (25 representative national samples), the lower portion for Study 2 (student samples from 68 countries). The first column of HLM coefficients indicates the average effect of sex on each value (sex slope). The values in the second and third columns of HLM coefficients test our hypotheses. The second column of HLM coefficients indicates effects of gender equality on the mean importance of each value across countries. The third column of HLM coefficients indicates effects of gender equality on the sex slopes.

The first column of HLM coefficients in Table 2 shows values that are all significant, replicating findings reported in Schwartz and Rubel (2005). The positive slopes for sex indicate that benevolence and universalism values are more important to women (coded 2) than to men (coded 1) across countries in both studies. The negative slopes indicate that power, achievement, and stimulation values are more important to men than to women.

The second column of HLM coefficients in Table 2 indicates that gender equality relates significantly to the importance of each value across countries in both studies. Greater gender equality predicts more importance of benevolence, universalism, and stimulation and less importance of power and achievement. This confirms Hypotheses 1 and 2 for these values in both studies.

The third column of HLM coefficients in Table 2 tests the hypotheses regarding the effect of gender equality on the size of sex differences in value importance. Nine of the 10 are significant, and all are in the hypothesized direction. In both studies, the coefficients indicate that the positive association of benevolence and universalism values with gender equality is stronger for women than for men. The coefficients also indicate that the negative association of power and achievement values with gender equality is weaker for men than for women. Finally, the positive association of stimulation values with gender equality is stronger for men than for women. This confirms Hypotheses 3, 4, and 5 in both studies.

Exemplary Figures 1A and 1B illustrate two sets of the findings. They show that benevolence values are more important to women and power values are more important to men. Relevant to the hypotheses, they show that the sex differences in the importance of these two values are larger (diverge) under high gender equality. Moreover, this divergence is due to a sharper rise in the importance of benevolence values among women and to a shallower drop in the importance of power values among men.

Values Expected to Show No Change or Reduced Sex Effects With Greater Gender Equality

Table 3 reports the HLM coefficients for the five values hypothesized to show no larger sex differences with greater societal gender equality. The positive sex slopes in the first column of

[5] Value means and standard deviations for men and women in each sample are available from Shalom H. Schwartz.

Table 2
Predicting Sex Differences and Value Means With the Gender Equality Index Across Countries for Values on Which Sexes Presumably Differ Inherently

Value	Sex slope: Effect on value mean		Gender equality: Effect on value mean		Gender equality: Effect on sex slope		Nature of change in value importance as gender equality increases
	HLM coefficient	*SE*	HLM coefficient	*SE*	HLM coefficient	*SE*	
ESS							
Benevolence	.214***	.014	.085**	.025	.052***	.011	Women increase more
Universalism	.150***	.011	.062***	.016	.030*	.013	Women increase more
Power	−.239***	.019	−.112***	.026	−.063**	.019	Men decrease less
Achievement	−.209***	.019	−.138***	.027	−.027	.017	Men decrease slightly less
Stimulation	−.147***	.017	.095***	.018	−.038**	.011	Men increase more
Students							
Benevolence	.130***	.013	.099***	.023	.046***	.012	Women increase more
Universalism	.087***	.018	.068*	.028	.072***	.021	Women increase more
Power	−.039***	.023	−.127***	.040	−.086***	.020	Men decrease less
Achievement	−.094***	.014	−.091**	.030	−.034**	.013	Men decrease less
Stimulation	−.184***	.026	.276***	.047	−.060*	.030	Men increase more

Note. Means diverged for all values as gender equality increased. HLM = hierarchical linear model; ESS = European Social Survey, representative national samples from 25 countries, controlling for age and education; Students = college student samples from 68 countries.
* $p < .05$. ** $p < .01$. *** $p < .001$.

HLM coefficients indicate that women rate security values as more important than men do in both studies and tradition values as more important in Study 1. The negative slopes indicate that men rate self-direction and hedonism values as more important than women do in both studies. There was no sex effect for conformity values in either study or for tradition values in Study 2.

The significant coefficients in the second column of HLM coefficients in Table 3 indicate that in both studies, self-direction and hedonism values are more important, whereas tradition and security values are less important, in countries with greater gender equality. Conformity values are less important in countries with greater gender equality in Study 1 but are unrelated to gender

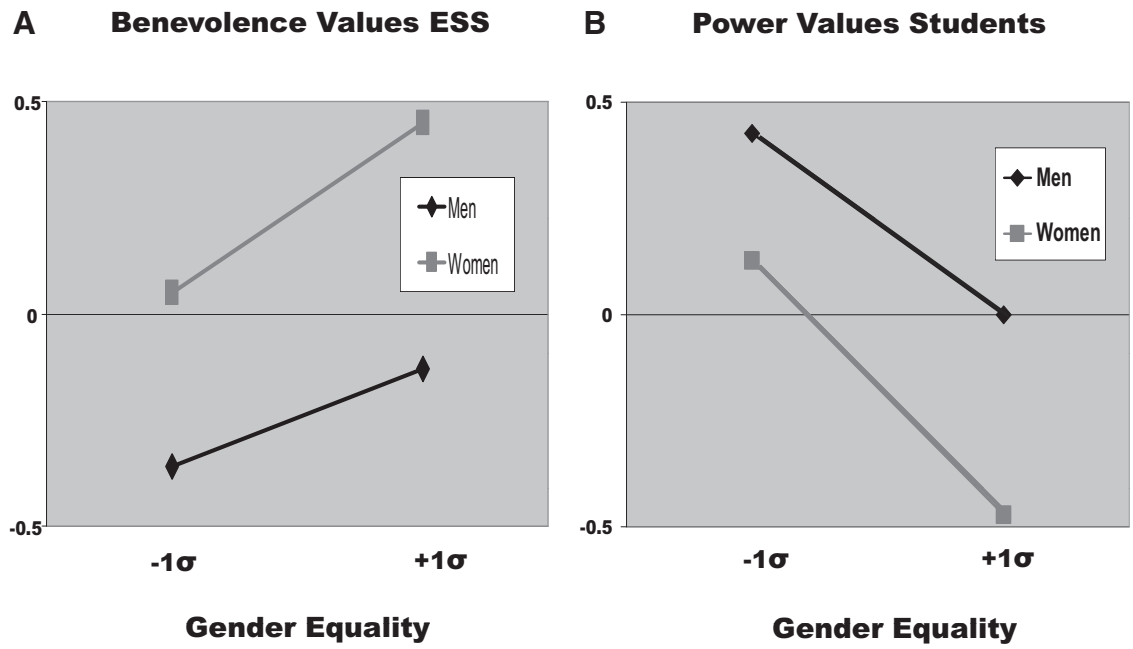

Figure 1. Importance that women and men attribute to benevolence and power values as a function of national gender equality (standardized). A: Benevolence in Study 1, European Social Survey (ESS). B: Power in Study 2, students.

Table 3
Predicting Sex Differences and Value Means With the Gender Equality Index Across Countries for Values on Which Sexes Presumably Do Not Differ Inherently

Value	Sex slope: Effect on value mean		Gender equality: Effect on value mean		Gender equality: Effect on sex slope		Nature of change in value importance as gender equality increases
	HLM coefficient	*SE*	HLM coefficient	*SE*	HLM coefficient	*SE*	
ESS							
Conformity	.027	.017	−.019	.036	−.007	.016	Both unchanged
Tradition	.156***	.011	−.153***	.023	.017*	.007	Both decrease, men more women less; value means diverge
Security	.171***	.010	−.128*	.054	.001	.012	Sexes decrease equally
Self-direction	−.083***	.011	.121***	.020	.013	.009	Sexes increase equally
Hedonism	−.120***	.023	.154***	.039	.014	.023	Sexes increase equally
Students							
Conformity	−.015	.021	−.390***	.035	.001	.019	Sexes decrease equally
Tradition	−.010	.021	−.433***	.051	−.075***	.021	Both decrease, women more men less; value means diverge
Security	.044**	.016	−.216***	.031	−.033	.018	Sexes decrease equally
Self-direction	−.079***	.015	.216***	.029	.030*	.014	Women increase more; value means converge
Hedonism	−.258***	.031	.469***	.052	.006	.013	Sexes increase equally

Note. HLM = hierarchical linear model; ESS = European Social Survey, representative national samples from 25 countries, controlling for age and education; Students = college student samples from 68 countries.
* $p < .05$. ** $p < .01$. *** $p < .001$.

equality in Study 2. Except for the last finding, these results confirm predictions in Hypothesis 1 and Hypothesis 2.

According to Hypothesis 6, gender equality is unrelated or negatively related to the size of sex differences in the five values reported in Table 3. The HLM coefficients for the gender equality effect on the sex slopes (i.e., reported in the third column of HLM coefficients) in Table 3 fit this expectation for four values (conformity, security, self-direction, and hedonism) in both studies, supporting Hypothesis 6. For self-direction, there is even evidence that the sex difference is smaller under high gender equality. The coefficients for tradition confound expectations, however. In the ESS study, there is a larger sex difference (women higher) under high gender equality (see Figure 2A). In the student study, in contrast, there is a crossover interaction: Women rate tradition values as more important where gender equality is low; men rate tradition values as more important where gender equality is high (see Figure 2B). Figure 2B reveals that the size of the sex difference is small at both levels of gender equality.

Discussion

In the current research, we sought to explain cross-national variation in the size of sex differences in values. We hypothesized that this variation depends on the level of societal gender equality. We further hypothesized that with greater gender equality, sex differences are larger for five values identified as inherently more important for one sex. In contrast, we expected the size of sex differences not to relate to gender equality for five other values identified as having no inherent association with one or the other sex.

We first established that the sex differences in the 10 basic values reported by Schwartz and Rubel (2005) replicated when analyzed in a different manner in an expanded set of samples. Men attributed more importance than did women to power, achievement, hedonism, stimulation, and self-direction values. Women attributed more importance than did men to benevolence, universalism, and security values. There were no consistent differences for conformity and tradition values.

We then tested hypothesized relations between gender equality and the overall importance of each value. As hypothesized, in societies with greater gender equality, both men and women attributed more importance to benevolence, universalism, self-direction, hedonism, and stimulation values. Increased individual resources of wealth, education, and autonomy that accompany greater gender equality facilitate the expression and attainment of these values. Also as hypothesized, both sexes attributed less importance to power, achievement, security, conformity, and tradition values with greater gender equality. The increased individual resources that accompany gender equality make these anxiety-based values less important because these resources reduce uncertainty and enhance people's ability to control threat and to achieve desired goals (Schwartz, 2006b, 2007a; Schwartz & Sagie, 2000).

Cross-National Variation in the Size of Sex Differences

Our primary focus was cross-national variation in the size of sex differences. We hypothesized that (a) the inherently greater importance of benevolence and universalism values for women augments positive effects of gender equality on these values for women compared with men, (b) the inherently greater importance of stimulation values for men augments positive effects of gender equality on these values for men compared with women, and (c) the inherently greater importance of power and achievement val-

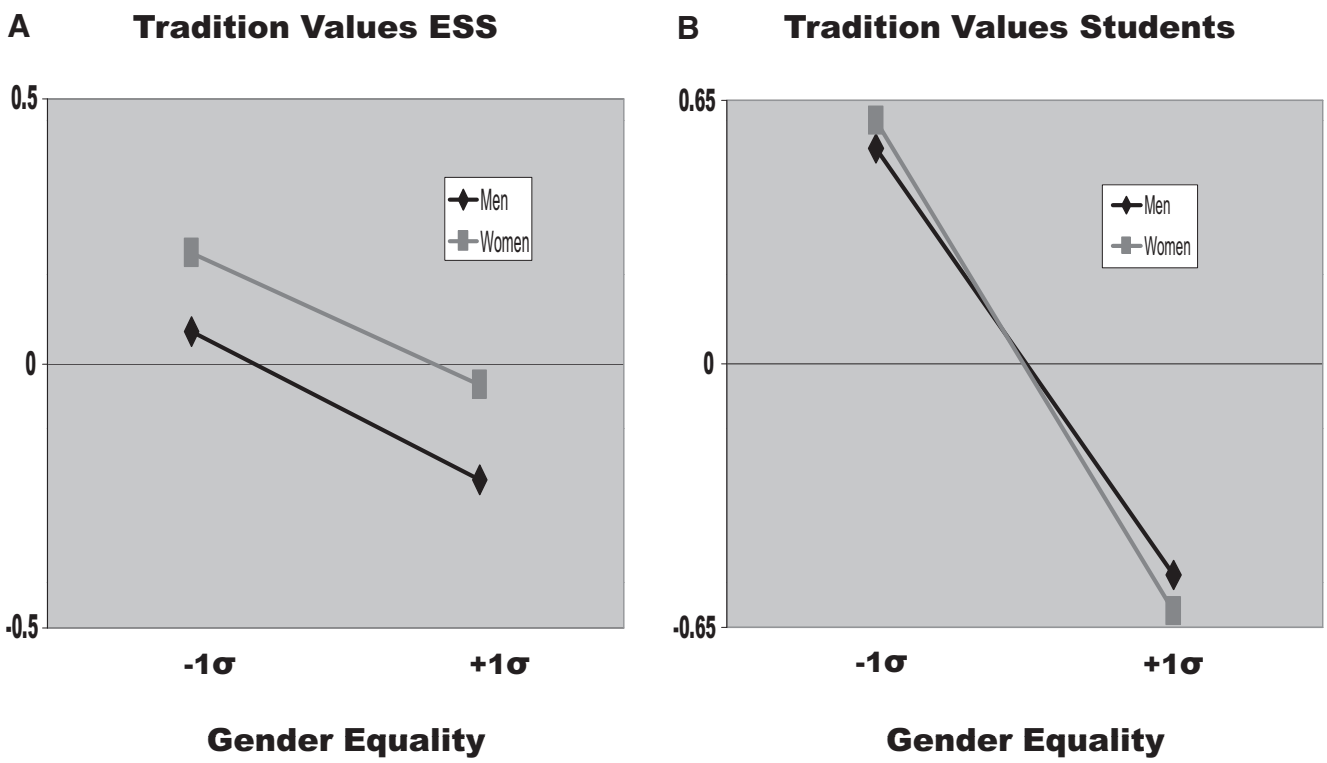

Figure 2. Importance that men and women attribute to tradition values as a function of national gender equality (standardized). A: Study 1, European Social Survey (ESS). B: Study 2, students.

ues for men diminishes negative effects of gender equality on these values for men compared with women. Both studies confirmed these three hypotheses. In contrast, for the five values for which we did not posit an inherent link to either sex, we hypothesized (d) no association of sex differences with greater gender equality or even smaller differences. This hypothesis was confirmed for hedonism, security, conformity, and self-direction values in both studies.

In the student study, the sex difference in self-direction values was smaller in high gender equality countries: Men emphasized these values much more than women did in low gender equality countries, but only a little more in high gender equality countries. Why did greater gender equality yield a smaller sex difference in self-direction values only in the student study? Self-direction values correlate substantially with education, rising sharply at the college level (Schwartz, 2002; Wach & Hammer, 2003). This may reflect socialization for intellectual independence in higher education. The ratio of women to men in colleges averaged 49/100 in the five countries lowest in gender equality in 1991 and 119/100 in the five countries highest in gender equality.[6] Where women are a clear minority on campus, expectations that they show less independence may prevail. Where women are a majority, such expectations could subvert the goals of education. More equal expectations for independent thought in the colleges of high gender equality countries may explain the smaller sex difference in self-direction values.

Unexpectedly, with greater gender equality, the importance of tradition values decreased more among men than women in the ESS study but more among women than men in the student study (see Table 3 and Figure 2). Women attributed more importance to tradition values at both low and high levels of gender equality in the ESS study. In the student study, though there was no overall sex difference, tradition values were more important to women under low gender equality and to men under high gender equality. Follow-up analyses address these unexpected findings.

Two items measured tradition in the representative samples in the ESS study. Item 9 (humility and modesty) showed equally negative associations with gender equality for women and men, as expected. Item 20 (maintaining family and religious traditions) yielded the unexpected finding: Its negative association with gender equality was smaller for women. This may be because women in high gender equality countries continue to take primary responsibility for preserving family and religious traditions (Georgas et al., 2006).

In the student study, two SVS tradition items, "HUMBLE" and "MODERATE," were the source of the greater negative association of tradition values with gender equality for women. The proportions of female students on college campuses may also explain this finding. In low gender equality countries, where

[6] Data were downloaded on July 10, 2008, from http://www.nationmaster.com/graph/edu_rat_of_fem_to_mal_enr_in_ter_edu-ratio-female-male-enrollments-tertiary&date = 1991. This is the most appropriate year for which data are available for most of the countries in the student study.

women are a clear minority, traditional expectations that women be modest and humble are likely to prevail even on campus. In high gender equality countries, with substantial proportions of women on campus, such expectations of women are likely to lose force, especially for female students. Adding this change in the expectations of female students to the overall drop in the importance of tradition values for both sexes leads to the stronger negative association of these two tradition items with gender equality among women.

There was a smaller sex difference with greater societal gender equality for only one of the five values postulated to have no inherent association with one sex. This might seem surprising because gender equality could be expected to reduce differences in the gender role experiences and expectations that presumably give rise to sex differences in these values. The lack of convergence suggests that greater societal gender equality has yet to produce profound changes in the gender role experiences and diffuse gender expectations that may influence value importance (cf. Georgas et al., 2006).

Replication of Findings

Both studies confirmed the hypotheses regarding associations between the size of sex differences and gender equality for 9 of the 10 values. We also ran the same HLM analyses separately for each of the three components of the gender equality index—the 1980s index of gender equality, the 1990s index of gender equity, and the 1985 average family size, reversed. The coefficients for the effects of gender equality on the sex slopes were in the same direction as the composite index in 55 of the 60 analyses (10 values $\times$ 2 studies $\times$ 3 indicators of gender equality). None of the five reversals were significant and all were in cases where gender equality was hypothesized to be unrelated to the size of the sex difference. These analyses lend further confidence to the findings with the composite gender equality index.

The two studies differed in important aspects. They were based on different types of samples (representative national vs. college student), different sets of countries (44 nonoverlapping countries), different value instruments (SVS vs. PVQ), and somewhat different periods of data gathering (median year 2003 in Study 1, 1994 in Study 2). Moreover, the range of societal gender equality across countries was much larger in Study 2 than in Study 1. Considering all of these differences, the findings show encouraging robustness.

Related Research on the Size of Sex Differences and Alternative Explanations

Research on traits, aspects of emotion, and mate preferences has also found variation in the size of sex differences with increasing societal gender equality. In the following section, we briefly describe these findings and the alternative explanations proposed for them and assess whether these explanations can account for the current findings with values.

Traits. Costa et al. (2001) found four personality traits on which women scored consistently higher than men across countries. The traits were neuroticism, agreeableness, and two composite variables they created, *feminine extraversion* (loving, sociable, submissive, cautious, and cheerful) and *feminine openness* (preferring feelings and novelty over ideas). The size of sex differences in all four traits varied in a similar manner across countries: Differences were generally larger in European and American than in African and Asian samples. Costa et al. (2001) correlated the average size of sex differences in the four traits with various country characteristics in 22–23 countries. They found larger sex differences in countries that were wealthier, had lower women's fertility rates, had higher ratios of women's to men's literacy, and had cultures that emphasized autonomy more. In other words, sex differences in the traits were larger in countries with greater gender equality. This parallels our findings for 5 of the 10 values.

Guimond et al. (2007) offered a general explanation for cross-national variation in the size of sex differences in self-reported personality variables. They contended that people in low gender equality (traditional) societies compare themselves with same-sex others when responding to personality questionnaires. This diminishes sex differences. In contrast, people in more gender-equal societies are more likely to engage in cross-sex comparison, making gender identity more salient. This presumably induces self-stereotyping in gender terms in high gender equality societies, yielding larger gender differences in self-reported personality.

Costa et al. (2001) offered a similar explanation based on social comparison processes. In addition, they suggested that subtle gender differences may not be noticed in collectivist societies where personality traits are generally less relevant. They also suggested that gene pool differences between non-European and European countries might explain the variation in sex effects. Finally, they speculated that even real sex differences in personality may be obscured in traditional cultures because they are attributed to roles.

None of these explanations distinguish among different personality variables. The sources of sex differences they propose (social comparison, relevance of personality traits, gene pools, attribution) would imply that sex differences should be larger with greater gender equality for all 10 values. Findings for half of the values in the current study contradict this implication. In contrast, our theorizing successfully predicted which values would exhibit larger sex differences with greater gender equality and which values would not.

Even for the five values predicted to show larger sex differences under higher gender equality by both the alternative explanations and our own, our explanation makes more refined predictions. It predicts whether the positive or negative association of a value with gender equality is stronger for men or for women. We propose that, with greater gender equality, the importance of a value is augmented or diminished more for the sex to which it is inherently more important. Findings for the five values postulated to be related inherently to one sex confirmed this implication. For example, greater gender equality was associated more positively with benevolence for women and more negatively with power for men. The alternative explanations do not account for sex differences in the strength of associations.

Emotions. Fischer and Manstead (2000) examined the size of sex differences in the duration of emotional experiences, their intensity, and their nonverbal expression across 37 countries for seven emotions. The most consistent predictor of the size of sex differences in emotions was the United Nations gender empowerment index, a measure of gender equality in a country's political and economic life. Sex differences in all three types of emotional reactions were significantly larger in countries high on this index

of societal gender equality than in countries low on the index. This too parallels our finding for 5 of the 10 values.

Fischer and Manstead's (2000) explanation for their finding draws on the substantial positive correlation between the United Nations gender empowerment index and Hofstede's individualism–collectivism index. They suggested that the critical problem in individualistic cultures is to find a balance between the competing demands of achieving and maintaining independence on the one hand and maintaining the integrity of the social unit on the other. In response to this problem, individualist cultures socialize males to specialize in independence and females to specialize in social relations. Males learn to experience emotions less intensely and females learn to be more emotionally expressive to provide the emotionality necessary for social solidarity in individualist cultures (i.e., countries with greater gender equality). Collectivistic cultures do not have to create specialists because the cultural task of the individual is to adjust to significant others and maintain interdependence, so male–female differences in emotion reactions are smaller.[7]

This explanation of variation in the size of sex differences in emotions cannot explain our findings with values. It implies that under high gender equality, the size of sex differences in values should be larger for values whose pursuit or expression entails stronger emotional experiences and expressiveness. Moreover, these values should be more important for women than for men. There are no grounds for positing that greater emotionality is associated with the five values that show larger sex differences under high gender equality (e.g., universalism) than with the five values that do not (e.g., security). Moreover, men, rather than women, rate three of the values that concern emotional experience (i.e., power, achievement, stimulation) more important.

Mate preferences. Two studies have reported that gender differences in mate preferences converge as societies provide women more reproductive freedom and higher educational equality (Eagly & Wood, 1999; Kasser & Sharma, 1999). Across societies, women more than men prefer mates who can provide resources (e.g., status, financial security). Women's preference for such mates decreases, however, as social conditions give them more control over their own destiny, whereas men's preferences are unaffected. Thus, the sex difference decreases with greater gender equality. This is opposite to the increases in sex differences that have been documented previously for traits (Costa et al., 2001) and for emotions (Fischer & Manstead, 2000) and that this study documents for five personal values. Social role theory can explain the mate preferences finding as being due to women's increased ability to acquire resources themselves with greater role equality rather than requiring mates who can provide resources. An evolutionary-interactionist view could argue that women have an evolved psychological mechanism to prefer mates who can provide resources, but this mechanism is activated less strongly in a context that enables them to attain resources themselves.

Mate preferences are characteristics one seeks in others, not characteristics of one's own personality. So the finding of a pattern of variation in the size of sex differences opposite to that for one's own traits, emotions, and five values is not problematic. Women's greater preference than men's for mates of high status and wealth implies that women attribute more importance to power values in their mates than men do. This is compatible with the evolutionary explanation we proposed for men's greater valuing of power—power gives men an advantage in competing for mates.

Applying our explanation to traits and emotions. Researchers have presented separate explanations for cross-national variation in the size of sex differences in one's own traits, emotions, and values. We have shown that the explanations for traits and emotions do not fit values. We now speculate that our explanation for values might fit traits and emotions. All of the relevant traits and emotions analyzed by Costa et al. (2001) and by Fischer and Manstead (2000) were stronger among women than men, and all of the sex differences were greater in more gender-equal societies. To fit our explanation, these traits and emotions should also all be associated inherently more with being female than with being male. If so, women would express them more freely as societal gender equality increases, leading to larger sex differences. Are there grounds to infer that these traits and emotions are inherently more female?

Costa et al. (2001) specified four traits: neuroticism, agreeableness, feminine extraversion, and feminine openness. Neuroticism refers largely to negative emotionality, as did six of the seven emotions that Fischer and Manstead (2000) studied. Evolutionary and social role theory reasoning can support the claim of stronger inherent emotionality among females as compared with males. Women make a larger parental investment than do men and are therefore more likely to evolve patterns of behavior that will enable their children to reach reproductive age. Emotional sensitivity and expressiveness are such behaviors. They are critical for maintaining close interpersonal ties in extended families, thereby contributing to successful child rearing. Moreover, women's role in reproduction and caring, grounded in their ability to gestate, gives them direct nurturing experience in which emotional sensitivity and expressiveness are central.

The evolutionary and social role arguments that support a view of emotionality as inherently more characteristic of women than of men also apply to the feminine openness trait, the agreeableness trait, and the feminine extraversion trait that Costa et al. (2001) specified. The two strong positive facets of feminine openness, feelings and aesthetics, both refer to emotional sensitivity, whereas the one negative facet, ideas, does not. The feelings facet measures receptiveness to inner feelings and experiencing emotions deeply. The aesthetics facet measures being moved by art, music, poetry, and beauty. The emotionality explanation applies less well to the weak positive facet, actions. Agreeableness is critical for building and maintaining close, supportive family relationships and for successful nurturing, activities crucial and more common for women than for men according to the evolutionary and social role approaches. The behaviors described by the three positive facets of feminine extraversion (warmth, gregariousness, and positive emotions) are critical for the same purposes, but those described by the negative facets (assertiveness and excitement seeking) would be disruptive.

[7] A weakness of this explanation is the fact that the United Nations gender empowerment index was a stronger, more consistent predictor of the size of sex differences than was the index of cultural individualism–collectivism. Yet the latter was the basis of the explanation. In the current study, individualism did not predict the size of sex differences in values, whereas the index of gender equality did.

In sum, the ideas that explain cross-national variation in the size of sex differences in values may also parsimoniously explain almost all of the findings of cross-national variation in the size of sex differences in one's own traits and emotions. Our explanation, unlike the alternatives, predicts divergence between the sexes with greater societal gender equality only for personality variables that are inherently associated with one sex, not for all personality variables. The one trait that showed no pattern of divergence in Costa et al. (2001) was conscientiousness. Fitting our explanation, the major components of this trait, dependability and hard work, are critical for the distinctive activities of both sexes. Hence, neither evolutionary nor social role reasoning imply an inherent link to one or the other sex.

Strengths and Limitations

Several strengths of the current research merit mention. This research innovates in several ways. First, it studies relations of sex differences to gender equality for all 10 basic values. Second, it develops and assesses a theory that makes different predictions for different values. Unlike past studies of personality variables, it does not assume that sex differences vary with societal characteristics in the same way for all values. Third, it addresses variation in sex differences across representative national samples from 25 countries, expanding on the 19 in Schwartz and Rubel (2005). It also tests the robustness of the findings and the theorizing by replicating the analyses with a different instrument to measure values and across student samples from 68 countries that differ substantially on characteristics relevant to gender equality. Finally, it uses indexes of values for which equivalence of meaning, reliability, and validity in predicting attitudes and behavior have been established, and it uses a more reliable index of societal gender equality than previous studies did.

A possible limitation of Study 2 is the use of data obtained over a 17-year period, making the findings vulnerable to period effects. To assess such effects, we added the year of data gathering to the HLM analyses. This did not change the findings for divergence, parallel change, or convergence in the size of sex differences for any of the values.

Methodological Issues and Implications

Critics of using self-report data for cross-cultural comparisons note that respondents tend to compare themselves with familiar others when answering self-report items, the so-called reference group effect (e.g., Peng, Nisbett, & Wong, 1997). If this occurs, the standard of comparison will differ in each society. Hence, group mean differences will not reflect valid cross-cultural differences. This does not appear to be a problem in the current research. The self-report formats of our value instruments minimize social comparison. They elicit the importance of each value relative to all of the individual's own values, a within-person comparison. Moreover, we center individuals' responses on their own mean response to all value items. This transforms absolute value ratings into value priorities and gives each person in each country the same mean of zero. It provides a within-person standard of comparison that does not vary across countries.

The predictability and meaningfulness of the current findings are relevant not only to sex differences: They also support aggregation of self-reported values to describe national or other culture group differences. They add to tens of meaningful associations between aggregated national value scores and other country characteristics (e.g., Schwartz, 2004, 2006a, 2007a, 2007b). Together, these findings show that the reference group effect is not a critical source of distortion in indexes of self-reported values based on the SVS and PVQ.

An interesting implication of the current research is that gender equality may contribute to gender diversity rather than to gender similarity, at least in some areas. Greater equality appears to promote the freer expression of values that are inherently important for women (e.g., benevolence) or for men (e.g., stimulation). This runs contrary to a simplified reading of both role theory and evolutionary psychology as suggesting that greater gender equality necessarily leads to more gender similarity.

In this article, we have focused on cross-national variation in the size of sex differences in values. The magnitude of these differences varied substantially across countries. To keep things in perspective, it is critical to remember that correlations of each of the values with societal differences in gender equality and its components were in the same direction for both men and women. Thus, the sex differences discussed here should be viewed within a wider context of gender similarity.

References

Bandura, A. (1977). *Social learning theory.* New York: General Learning Press.

Baumeister, R. F., Catanese, K. R., & Vohs, K. D. (2001). Is there a gender difference in strength of sex drive? Theoretical views, conceptual distinctions, and a review of relevant evidence. *Personality and Social Psychology Review, 5,* 242–273.

Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: A contextual evolutionary analysis of human mating. *Psychological Review, 100,* 204–232.

Buss, D. M., & Schmitt, D. P. (1996). Strategic self-promotion and competitor derogation: Sex and context effects on the perceived effectiveness of mate attraction tactics. *Journal of Personality and Social Psychology, 70,* 1185–1204.

Byrnes, J. P., Miller, D. C., & Schafer, W. D. (1999). Gender differences in risk taking: A meta-analysis. *Psychological Bulletin, 125,* 367–383.

Central Co-ordinating Team, European Social Survey. (2002). *The European Social Survey Self-Completion Questionnaire (Round 1 2002).* Available from http://ess.nsd.uib.no/index.jsp?year=2003&country=&module=questionaires

Costa, P. T., Jr., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81,* 322–331.

Daly, M., & Wilson, M. (2001). Risk-taking, intrasexual competition, and homicide. In J. A. French, A. C. Kamil, & D. W. Leger (Eds.), *Nebraska Symposium on Motivation: Vol. 47: Evolutionary psychology and motivation* (pp. 1–36). Lincoln: University of Nebraska Press.

Davidov, E., Schmidt, P., & Schwartz, S. H. (2008). Bringing values back in: The adequacy of the European Social Survey to measure values in 20 countries. *Public Opinion Quarterly, 72,* 420–445.

Davies, A. P. C., & Shackelford, T. K. (2008). Two human natures: How men and women evolved different psychologies. In C. B. Crawford & D. Krebs (Eds.), *Foundations of evolutionary psychology: Ideas, issues and applications* (3rd ed., pp. 261–280). Mahwah, NJ: Erlbaum.

Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior: Evolved dispositions versus social roles. *American Psychologist, 54,* 408–423.

Encyclopedia Britannica (Ed.). (1987). *Encyclopaedia Britannica Almanac 1987*. Chicago: Author.

Fischer, A., & Manstead, A. (2000). The relation between gender and emotion in different cultures. In A. Fischer (Ed.), *Gender and emotion: Social psychological perspectives* (pp. 71–94). London: Cambridge University Press.

Georgas, J., Berry, J. W., van de Vijver, F., Kağitçibaşi, C., & Poortinga, Y. H. (Eds.). (2006). *Families across cultures: A 30-nation psychological study.* Cambridge, United Kingdom: Cambridge University Press.

Grusec, J. E., & Kuczynski, L. (Eds.). (2001). *Parenting and the internalization of values: A handbook of contemporary theory.* New York: Wiley.

Guimond, S., Branscombe, N. R., Brunot, S., Buunk, A. P., Chatard, A., Désert, M., et al. (2007). Culture, gender, and the self: Variations and impact of social comparison processes. *Journal of Personality and Social Psychology, 92,* 1118–1134.

Holinger, P. C. (1987). *Violent deaths in the United States.* New York: Guilford Press.

Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review, 65,* 19–51.

Irwin, C. E., Igra, V., Eyre, S., & Millstein, S. (1997). Risk-taking behavior in adolescents: The paradigm. In M. S. Jacobson, J. Rees, N. H. Golden, & C. E. Irwin (Eds.), *Annals of the New York Academy of Sciences: Vol. 817. Adolescent nutritional disorders: Prevention and treatment* (pp. 1–35). New York: New York Academy of Sciences.

Jowell, R., & the Central Co-ordinating Team, European Social Survey 2002/2003. (2003). ESS Round 1 [Technical report]. London: City University, Centre for Comparative Social Surveys. Retrieved November 1, 2008, from http://ess.nsd.uib.no/index.jsp?year=2003&country=&module=download

Kasser, T., & Sharma, Y. (1999). Reproductive freedom, educational equality, and female's preference for resource acquisition characteristics in mates. *Psychological Science, 10,* 374–377.

Kenrick, D. T., Maner, J. K., Butner, J., Li, N. P., Becker, V., & Schaller, M. (2002). Dynamical evolutionary psychology: Mapping the domains of the new interactionist paradigm. *Personality and Social Psychology Review, 6,* 347–356.

Kluckhohn, C. (1951). Values and value-orientations in the theory of action: An exploration in definition and classification. In T. Parsons & E. Shils (Eds.), *Toward a general theory of action* (pp. 388–433). Cambridge, MA: Harvard University Press.

Peng, K., Nisbett, R. E., & Wong, N. Y. C. (1997). Validity problems comparing values across cultures and possible solutions. *Psychological Methods, 2,* 329–344.

Population Crisis Committee. (1988). *Population Briefing Paper No. 20.* Washington DC: Author.

Prescott-Allen, R. (2001). *The wellbeing of nations: A country-by-country index of quality of life and the environment.* Washington, DC: Island Press.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods.* Newbury Park, CA: Sage.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theory and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). New York: Academic Press.

Schwartz, S. H. (2002). *Education and value priorities.* Unpublished manuscript, The Hebrew University of Jerusalem, Jerusalem, Israel.

Schwartz, S. H. (2004). Mapping and interpreting cultural differences around the world. In H. Vinken, J. Soeters, & P. Ester (Eds.), *Comparing cultures: Dimensions of culture in a comparative perspective* (pp. 43–73). Leiden, the Netherlands: Brill.

Schwartz, S. H. (2006a). A theory of cultural value orientations: Explication and applications. *Comparative Sociology, 5,* 136–182.

Schwartz, S. H. (2006b). Les valeurs de base de la personne: Théorie, mesures et applications [Basic human values: Theory, measurement, and applications]. *Revue Française de Sociologie, 42,* 249–288.

Schwartz, S. H. (2007a). Cultural and individual value correlates of capitalism: A comparative analysis. *Psychological Inquiry, 18,* 52–57.

Schwartz, S. H. (2007b). Value orientations: Measurement, antecedents and consequences across nations. In R. Jowell, C. Roberts, R. Fitzgerald, & G. Eva (Eds.), *Measuring attitudes cross-nationally: Lessons from the European Social Survey* (pp. 161–193). London: Sage.

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., & Harris, M. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology, 32,* 519–542.

Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology, 89,* 1010–1028.

Schwartz, S. H., & Sagie, G. (2000). Value consensus and importance: A cross-national study. *Journal of Cross-Cultural Psychology, 31,* 465–497.

Struch, N., Schwartz, S., & van der Kloot, W. (2002). Meanings of basic values for women and men: A cross-cultural analysis. *Personality and Social Psychology Bulletin, 28,* 16–28.

Valian, V. (1998). *Why so slow? The advancement of women.* Cambridge, MA: MIT Press.

Wach, M., & Hammer, B. (2003). *La structure des valeurs, est-elle universelle? Genèse et validation du modèle compréhensif de Schwartz* [The structure of values, is it universal? Genesis and validation of the comprehensive model of Schwartz]. Paris: L'Harmattan.

Whyte, M. (1978). *The status of women in preindustrial societies.* Princeton, NJ: Princeton University Press.

Wilson, M., & Daly, M. (1997). Life expectancy, economic inequality, homicide and reproductive timing in Chicago neighborhoods. *British Medical Journal, 314,* 1271–1274.

Wood, W., & Eagly, A. H. (2002). A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin, 128,* 699–727.

(*Appendixes follow*)

Appendix A

Sample Sizes and Gender Equality Index Scores for Countries in Both Studies

	Student samples		ESS samples		Gender equality	
Country	Men	Women	Men	Women	Student	ESS
Argentina	148	203			0.21	
Australia	99	128			1.24	
Austria	38	75	1,054	1,156	0.77	−0.08
Belgium	115	377	928	868	1.17	0.49
Bosnia	61	172			0.55	
Brazil	267	315			−0.66	
Bulgaria	184	226			0.47	
Cameroon	54	40			−1.29	
Canada	166	291			1.11	
Chile	129	205			−0.61	
China	169	231			−0.93	
Costa Rica	47	89			−0.31	
Croatia	76	122			0.75	
Cyprus	70	68			−0.11	
Czech Republic	80	80	600	610	1.01	0.29
Denmark			742	715		1.50
Egypt	37	96			−1.74	
Estonia	131	240	794	1,137	1.01	0.27
Ethiopia	66	31			−0.87	
Finland	531	618	823	935	1.87	1.54
France	230	379	632	695	0.91	0.16
Georgia	76	129			0.52	
Germany, East	482	705	278	271	1.02	0.36
Germany, West	432	630	1,041	1,210	1.10	0.39
Ghana	112	98			−0.74	
Greece	65	244	1,065	1,389	0.36	−0.64
Hong Kong	252	338			0.15	
Hungary	125	197	742	822	0.86	0.12
India	25	88			−1.77	
Indonesia	63	200			−1.10	
Ireland	102	129	831	1,011	0.05	−1.17
Israel Jews	208	226	612	703	0.12	−0.98
Italy	187	494			0.52	
Japan	846	549			−0.67	
Korea, South	79	134			−0.74	
Macedonia	46	153			0.26	
Malaysia	79	122			−0.90	
Mexico	53	91			−0.46	
Namibia	132	116			−0.36	
Nepal	505	234			−2.00	
Netherlands	242	249	1,059	1,252	1.26	0.58
New Zealand	75	125			0.89	
Nigeria	56	44			−1.92	
Norway	137	187	953	854	1.59	1.13
Peru	127	114			−0.66	
Philippines	291	443			−0.69	
Poland	90	429	958	1,019	0.52	−0.38
Portugal	54	143	618	780	0.22	−0.51
Romania	82	105			0.53	
Russia	62	180			0.43	
South Africa	94	132			−0.47	
Senegal	111	33			−1.61	
Singapore	151	207			−0.17	
Slovakia	122	312	693	696	0.73	−0.06
Slovenia	97	115	655	734	0.40	−0.56
Spain	63	173	770	868	0.52	−0.48
Sweden	140	165	815	859	2.02	1.77
Switzerland	114	259	996	1,012	0.61	−0.19
Taiwan	40	94			−0.28	
Thailand	107	322			−0.42	
Turkey	38	70	717	878	−1.24	−3.09

Appendix A (*continued*)

	Student samples		ESS samples		Gender equality	
Country	Men	Women	Men	Women	Student	ESS
Uganda	141	42			−0.49	
Ukraine	207	512	703	1,177	0.21	−0.77
United Kingdom	54	97	841	908	1.05	0.30
USA	903	1189			1.15	
Venezuela	45	126			−0.59	
Yemen	114	82			−2.75	
Yugoslavia	73	275			−0.28	
Zimbabwe	106	96			−1.29	

Note. ESS = European Social Survey.

Appendix B

Value Items Used in Study 1 (European Social Survey)

Key	Value item
SD	1. Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.
PO	2. It is important to him to be rich. He wants to have a lot of money and expensive things.
UN	3. He thinks it is important that every person in the world be treated equally. He believes everyone should have equal opportunities in life.
AC	4. It's important to him to show his abilities. He wants people to admire what he does.
SE	5. It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.
ST	6. He likes surprises and is always looking for new things to do. He thinks it is important to do lots of different things in life.
CO	7. He believes that people should do what they're told. He thinks people should follow rules at all times, even when no one is watching.
UN	8. It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them.
TR	9. It is important to him to be humble and modest. He tries not to draw attention to himself.
HE	10. Having a good time is important to him. He likes to "spoil" himself.
SD	11. It is important to her to make her own decisions about what she does. She likes to be free and not depend on others.
BE	12. It's very important to her to help the people around her. She wants to care for their well-being.
AC	13. Being very successful is important to her. She hopes people will recognize her achievements.
SE	14. It is important to her that the government insure her safety against all threats. She wants the state to be strong so it can defend its citizens.
ST	15. She looks for adventures and likes to take risks. She wants to have an exciting life.
CO	16. It is important to her always to behave properly. She wants to avoid doing anything people would say is wrong.
PO	17. It is important to her to get respect from others. She wants people to do what she says.
BE	18. It is important to her to be loyal to her friends. She wants to devote herself to people close to her.
UN	19. She strongly believes that people should care for nature. Looking after the environment is important to her.
TR	20. Tradition is important to her. She tries to follow the customs handed down by her religion or her family.
HE	21. She seeks every chance she can to have fun. It is important to her to do things that give her pleasure.

Note. AC = achievement; BE = benevolence; CO = conformity; HE = hedonism; PO = power; SD = self-direction; SE = security; ST = stimulation; TR = tradition; UN = universalism. Items 1–10 show the male format, Items 11–21 show the female format. Items are from the European Social Survey Self-Completion Questionnaire, 2002 (Central Co-ordinating Team, European Social Survey, 2002).

Received December 3, 2007
Revision received January 12, 2009
Accepted January 20, 2009 ■