



Gender Differences in Personality and Interests: When, Where, and Why?

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Abstract

How big are gender differences in personality and interests, and how stable are these differences across cultures and over time? To answer these questions, I summarize data from two meta-analyses and three cross-cultural studies on gender differences in personality and interests. Results show that gender differences in Big Five personality traits are ‘small’ to ‘moderate,’ with the largest differences occurring for agreeableness and neuroticism (respective d s = 0.40 and 0.34; women higher than men). In contrast, gender differences on the people–things dimension of interests are ‘very large’ ($d = 1.18$), with women more people-oriented and less thing-oriented than men. Gender differences in personality tend to be larger in gender-egalitarian societies than in gender-inegalitarian societies, a finding that contradicts social role theory but is consistent with evolutionary, attributional, and social comparison theories. In contrast, gender differences in interests appear to be consistent across cultures and over time, a finding that suggests possible biologic influences.

Man is always looking for someone to boast to; woman is always looking for a shoulder to put her head on. – H. L. Mencken

The cocks may crow, but it’s the hen that lays the egg. – Margaret Thatcher

Common stereotypes hold that men and women differ on some personality traits (Ashmore, Del Boca, & Wohlers, 1986; Deaux & Lewis, 1983). Relative to women, men are seen to be more aggressive, arrogant, competitive, coarse, cruel, dominant, independent, rude, and unemotional; relative to men, women are seen to be more affectionate, anxious, compassionate, dependent, emotional, gentle, sensitive, sentimental, and submissive (Williams & Best, 1982, 1990). The two sexes are also seen as differing in their interests: Boys and men are believed to be more drawn to ‘thing-oriented’ activities (e.g., car repair, carpentry, engineering), and girls and women more to ‘people-oriented’ activities (e.g., nursing, dancing and acting, counseling; see Aros, Henly, & Curtis, 1998; Liben & Bigler, 2002; Shinar, 1975).

Are such stereotypes true? Do men and women in fact differ in their personality traits and interests? If so, how large are these differences, and how much do they vary across personality and interest domains? The ultimate question is *Why* do men and women (sometimes) differ in personality and interests?

To answer ‘why’ questions, it helps also to consider ‘when’ and ‘where’ questions – e.g., how consistent are gender differences over time and across cultures? Gender differences that vary over historical time and across cultures point to the importance of social–environmental and cultural factors as causes of gender differences (Eagly & Wood, 1999). In contrast, gender differences that are stable over time and across cultures suggest the influence of biologic factors (Lippa, 2005; Maccoby & Jacklin, 1974).

A Brief Introduction to Theories of Gender Differences

Theories of gender differences can be grouped into two broad categories: biologic theories and social–environmental theories (see Lippa, 2005). Biologic theories focus on sex-linked biologic factors such as genes, prenatal and postnatal exposure to sex hormones, and sex differences in neural development and brain structure – all ultimately molded by biologic evolution. In contrast, social–environmental theories focus on cultural and social factors – e.g., the effects of gender stereotypes, gender-related self-concepts, socialization pressures, social learning, social roles, and status differences between the sexes. Although it is tempting to dichotomize the causes of gender differences into ‘nature’ versus ‘nurture,’ in truth many gender differences result from both ‘nature’ and ‘nurture,’ as well as from complex interactions between the two (Lippa, 2005, 2007, 2009).

Biologic approaches to gender differences

Evolutionary theories of gender difference propose that because women and men have somewhat different reproductive natures (e.g., women invest more in offspring than men do, both physiologically and behaviorally), the two sexes evolved to have somewhat different traits, particularly in domains related to reproduction (Buss, 2008; Geary, 2009). In the realm of personality, higher male levels of aggressiveness, risk-taking, and status-seeking presumably evolved as sexually selected traits that fostered male dominance and helped ancestral men attract mates. Higher female levels of nurturance, tender-mindedness, and people orientation evolved as sexually selected traits that fostered women’s success at rearing children. Presumably, biologic evolution produces gender differences at a more proximate level by molding sex-linked genes, which then affect prenatal and postnatal hormone levels and physiological sex differences.

Although most biologic scientists accept that sexual selection has led to sex differences in physical traits such as height, musculature, and fat distributions, many social scientists are skeptical about the role of sexual selection in generating psychological gender differences. Contemporary gender researchers, particularly those who adopt social constructionist and feminist ideologies, often reject the notion that biologic factors directly cause gender differences (see Eagly & Wood, 2005; Lippa, 2005).

Social–environmental theories of gender

Social–environmental theorists instead propose that a complex cascade of social influences produce gender differences. Gender differences begin as a result of gender socialization – the systematic ways in which family members and society treat boys and girls differently, reward different behaviors in the two sexes, and provide different models of behavior to boys and girls. When children achieve a certain stage of cognitive development, ‘self-socialization’ commences. That is, children label themselves as ‘boys’ and ‘girls,’ they categorize people and behaviors in terms of ‘male’ and ‘female,’ and they begin to act in accordance with their self-labels and with societal standards of gender (Martin, 2000).

Social role theory proposes that behavioral gender differences often result from the different roles assigned to men and women in virtually all societies (Eagly, 1987; Eagly & Wood, 1999; Eagly, Wood, & Diekmann, 2000). Three components of gender roles are seen as particularly important: (i) Men are more often assigned to income-producing work, and women to childcare and tending the home. (ii) Men are more often assigned to some occupational roles (e.g., mechanic, engineer, executive), and women to others

(nurse, elementary school teacher, secretary). (iii) Men tend to occupy higher status positions in society than women do. According to social role theory, gender differences in personality result from men's and women's assigned roles, not from innate psychological differences between the sexes.

Two predictions follow from social role theory: (i) Gender differences should be stronger in gender-inegalitarian societies with strong gender roles than in gender-egalitarian societies with weak gender roles. (ii) As traditional gender roles weaken over time and as women and men assume more nearly equal roles in a given society, psychological gender differences should weaken and even disappear (see Eagly, Wood, & Johannesen-Schmidt, 2004).

Other social-environmental theories make different predictions about cross-cultural variations in gender differences. After assembling evidence that gender differences in personality are *stronger* in modern, gender-egalitarian societies than in more traditional and gender-inegalitarian societies (contrary to the predictions of social role theory), Costa, Terracciano, and McCrae (2001) hypothesized that attributional processes might be responsible. Specifically, they speculated that in traditional societies with strong gender roles, people tend to attribute behavioral gender differences to powerful gender roles rather than to differences in men's and women's internal dispositions. In contrast, in 'modern' societies with weak gender roles, people tend to attribute behavioral sex differences more strongly to internal traits and dispositions.

Guimond et al. (2007) offered another explanation for the finding that gender differences in personality tend to be larger in gender-egalitarian societies than in gender-inegalitarian societies. Using concepts from social comparison theory (Festinger, 1954) and social identity theory (Tajfel & Turner, 1986), they proposed that people in traditional, gender-inegalitarian societies are more likely to compare themselves to in-group members (e.g., their own sex), whereas people in 'modern,' gender-egalitarian societies are more likely to compare themselves to out-group members (i.e., the other sex). The result is that men and women in gender-egalitarian societies report larger personality differences than men and women in gender-inegalitarian societies.

To better understand the social comparison explanation, consider the example of self-reported height. If men and women report how 'tall' they are (say, on a scale ranging from 'very short' to 'very tall') by comparing themselves to members of their own sex, then sex differences in self-reported height are reduced and maybe even eliminated. However, if men and women report how 'tall' they are in comparison to 'people in general' (or in comparison to the other sex), then sex differences in self-reported height will be larger. (It is worth noting too that if people judge their height in relation to 'people in general,' sex differences in self-reported height will more *accurately* reflect actual sex differences in height. Of course, the most accurate way to assess self-reported height would be to ask participants to report their height in inches or centimeters, rather than using linguistically ambiguous rating scales, such as 'very short' to 'very tall.' See Biernat, 2003, 2009, for a related discussion of how rating scales affect the assessment of group stereotypes.)

Methods Used in the Study of Gender Differences in Personality and Interests

Personality and interest inventories

Research on gender differences in personality and interests typically relies on data from standardized tests. Because such tests use self-report scales, their scores may be influenced by social stereotypes, social desirability response sets, and self-construal processes (See Feingold, 1994; Guimond, 2008).

Personality and interest taxonomies

Most personality and interest tests assess people's positions on trait dimensions, and most empirical evidence on gender differences in personality and interests is based on trait conceptions of personality and interests. In personality research, the dominant trait taxonomy is the 'Big Five' model, which proposes five relatively independent 'super-factors' of human personality: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (John, Naumann, & Soto, 2008).

The dominant taxonomy in vocational interest research is Holland's (1992), which proposes six main types of interests and vocations: realistic, investigative, artistic, social, enterprising, and conventional (see Figure 1 for a graphic depiction and description of each type). The six RIASEC domains define individual difference dimensions as well as interest types.

Factor analytic and multidimensional scaling studies suggest that two 'super-factors' underlie individual differences in interests (Lippa, 1998; Prediger, 1982): (i) the people–things dimension that taps the degree to which individuals are interested in people-oriented activities and occupations versus thing-oriented activities and occupations, and (ii) the ideas–data dimension that taps the degree to which individuals are interested in activities and occupations that require creative thought and intelligence versus activities and occupations that entail more routine tasks that are less cognitively demanding. Overwhelming evidence shows that men and women differ substantially on the people–things dimension of interests but little on the ideas–data dimension (more on this later).

What counts as a 'big' or 'small' difference?

Most discussions of the 'size' of gender differences draw upon Cohen's (1977, 1988) classic benchmarks. For example, Hyde (2005) offered the following verbal designations: *d* values from 0.11 to 0.35 are 'small', 0.36 to 0.65 'moderate,' 0.66 to 1.0 'large,' and values greater than 1.0 are 'very large.' As others have noted, effect sizes labeled as 'small'

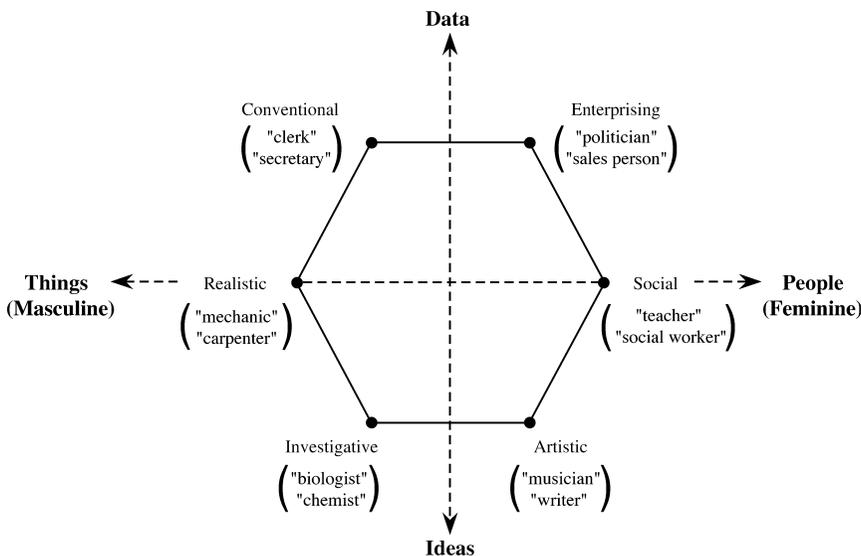


Figure 1 Holland's hexagon or RIASEC model.

or 'moderate' can have great practical significance, and most effects documented by psychologists fall in the 'small' to 'moderate' range. As we shall see, gender differences in Big Five traits tend to be 'small' to 'moderate.' In contrast, gender differences in interests – particularly differences along the people–things dimension – are often 'large' to 'very large.'

Del Giudice (2009) has recently argued that it may be misleading to report effect sizes for individual dimensions when researchers have identified agreed-upon taxonomies of relatively independent trait dimensions for particular psychological domains (such as personality and interests). Rather, a multidimensional distance should be computed. For gender differences in personality, this means that rather than (or in addition to) computing and reporting d statistics for each of the Big Five traits, researchers should compute a multivariate distance statistic for the entire 5-dimensional 'space' of personality – i.e., the Mahalanobis distance (D) statistic, which is the multivariate generalization of Cohen's d statistic.

By way of analogy, consider the following example. If asked –'What is the distance between Los Angeles, California, and Salt Lake City, Utah?' – you probably would not reply, 'It is 354 miles on the east–west dimension, and 505 miles on the north–south dimension.' Rather, you would give the two-dimensional Euclidian distance: 'It is a little <600 miles.' Similarly, Del Giudice argues that researchers should not report gender differences in personality just in terms of five separate d statistics – for extraversion, agreeableness, conscientiousness, neuroticism, and openness – but rather they should also report the Mahalanobis D statistic for the entire five-dimensional space of personality. When Del Giudice computed the Mahalanobis D for gender differences in Big Five traits, based on a published data set, he found that although the mean d for gender differences in individual Big Five traits was 0.27 (conventionally considered to be 'small'), the Mahalanobis D was in contrast 0.84, suggesting a relatively large mean separation of men and women in the multivariate 'space' of personality.

Meta-analytic reviews

The results of meta-analytic reviews provide what many researchers consider to be the gold standard for estimates of the magnitude of gender differences. Meta-analytic reviewers strive to quantitatively survey broad swaths of research on a particular topic. Effects sizes are computed in standardized units, such as Cohen's d , and then 'averaged' across all relevant studies. Typically, the goal is to assess the overall magnitude of an effect and to explore variables that moderate effect sizes.

Meta-analyses have been conducted on gender differences in personality (Feingold, 1994) and, more recently, on gender differences in interests (Su, Rounds, & Armstrong, 2009). Feingold's (1994) meta-analysis made heavy use of normative data from major personality inventories, synthesizing results from more than 100,000 participants. Su et al.'s (2009) meta-analysis similarly made use of normative data, this time from major vocational interest tests, synthesizing results from more than half a million participants. The results of these meta-analyses are summarized later.

Cross-cultural research

Cross-cultural research provides an important testing ground for theories of gender differences. If gender differences vary considerably across cultures, then the case for 'biology' is weakened. (But to play devil's advocate: Evolutionary theorists have recently proposed

that, rather than being rigid and fixed, gender differences reflect evolved tendencies in men and women that shift depending on situational and ecological factors; e.g., see Buss, 2005).

Specific patterns of gender differences across cultures support specific theories of gender differences. If gender differences are stronger in societies with strong gender roles than in societies with weak gender roles, then social role theories are supported (Eagly & Wood, 1999). The reverse pattern – stronger gender differences in gender-egalitarian societies than in gender-egalitarian societies – contradicts the predictions of social role theory but may offer support for attributional and social comparisons theories. Such patterns are also consistent with evolutionary theories that propose that ‘modern,’ affluent societies provide resource-rich environments that allow innate sex differences to express themselves fully, whereas less economically developed societies produce more stressful environments that hinder the development of both men and women, leading to greater gender similarity (Schmitt, Realo, Voracek, & Allik, 2008).

If gender differences are highly consistent across cultures – i.e., if they are impervious to variations in gender ideologies and the strength of gender roles – then biologic accounts of gender differences gain in plausibility. (But again, to play devil’s advocate: Social role theorists propose that virtually all existing societies are patriarchal, albeit to varying degrees. Thus, they argue that cross-culturally consistent gender differences reflect pervasive patriarchy [see Eagly & Wood, 1999, 2005]. At the same time, social role theorists predict that cross-cultural variations in gender differences should systematically covary with cross-cultural variations in the strength of gender roles – a prediction that is contradicted when gender differences are extremely consistent across cultures).

The *size* of gender differences, considered across cultures, also constitutes a kind of evidence that can be used to infer possible causes of gender differences. On the one hand, gender differences that are small and variable seem more likely to reflect the vicissitudes of social and cultural pressures (Hyde, 2005). On the other hand, gender differences that are large and consistent over time and across cultures seem more likely to reflect underlying biologic ‘presses’ or ‘biases.’ Ultimately, all theoretical perspectives must be required to predict the size of gender differences in different domains. Theories of must explain, for example, why gender differences in some personality traits are larger than others, and why gender differences in some interest domains are much larger than gender differences in any personality domain.

In recent years, three large-scale cross-cultural studies on gender differences in personality have been published (Costa et al., 2001; Lippa, 2010; Schmitt et al., 2008). The overall pattern of results across these studies is sufficiently consistent to aid researchers in selecting among competing theoretical accounts of gender differences. One of the three large-scale cross-cultural studies (Lippa, 2010) also investigated gender differences in interests.

The Evidence for Gender Differences in Personality and Interests

The overall pattern of gender differences in personality and interests

Table 1 presents key results for gender differences in Big Five personality traits and on the people–things dimension of interests. Most results come from the two meta-analyses and the three cross-cultural studies on gender differences described previously. Additional results come from a large-scale study conducted on gender-related interests (Lippa, 1998).

Table 1 Gender Differences (*d*) in Big Five Personality Traits and the People–Things Dimension of Interests from Seven Studies.

Personality and Interest Dimensions	Studies							Mean effect sizes across studies
	Costa et al. (2001) cross-cultural N > 22,000	Schmitt et al. (2008) cross-cultural N = 17,637	Lippa (2010) cross-cultural N > 200,000	Feingold (1994) meta-analysis N = 105,742	Su et al. (2009) meta-analysis N = 503,188	Lippa (1998) N = 2,361		
Extraversion	0.05	0.10	0.15	0.15	–	–	0.11	
Agreeableness	0.27	0.15	0.56	0.61	–	–	0.40	
Conscientiousness	0.01	0.12	–	0.13	–	–	0.09	
Neuroticism	0.26	0.40	0.41	0.28	–	–	0.34	
Openness	0.11	–0.05	–	–0.03	–	–	0.01	
People–Things Orientation			–1.40		–0.86	–1.29	–1.18	

Note. Positive effect sizes occur when women score higher than men. Negative effect sizes occur when men score higher than women.

In reporting results from Costa et al.'s (2001) cross-cultural study, I averaged effect sizes across their three samples (U.S. adults, a cross-cultural sample of college students, and a cross-cultural sample of adults) and I averaged effect sizes across Big Five facets (e.g., gender differences in six extraversion facets were averaged to produce an overall effect size for gender differences in extraversion). For the Schmitt et al. (2008) and Lippa (2010) studies, mean effect sizes across cultures are reported for Big Five traits and, in the case of Lippa's study, for a short 10-item measure of the people–things dimension of interests. Also presented in Table 1 is the mean effect size for gender differences along the people–things dimension of interests, based on data from Lippa's (1998) study of more than 2,000 participants. The right column of Table 1 presents mean effect sizes, averaged across studies.

The mean effect sizes in Table 1 show that agreeableness and neuroticism were the Big Five traits showing the largest gender differences (mean d s = 0.40 and 0.34, respectively), with women moderately higher than men on both traits. Gender differences in the other Big Five traits were smaller in magnitude, with women tending to be higher than men on all traits. Thus, in terms of gender differences, agreeableness and neuroticism appear to be the 'big two' of the Big Five.

It is worth noting that although gender differences are 'small' for three of the Big Five traits, they are sometimes larger for trait facets. For example, Costa et al. (2001) reported that, despite small gender differences in overall extraversion, women tended to be moderately higher than men on the extraversion facets of warmth, gregariousness, and positive emotions, whereas men tended to be higher than women on the extraversion facets of assertiveness and excitement seeking. Similarly, women tended to score higher than men on the 'esthetics' and 'feelings' facets of openness, whereas men tended to score higher than women on the 'ideas' facet of openness.

For the people–things dimension of interests, the results in Table 1 are clear, strong, and unambiguous. Men tend to be much more thing-oriented and much less people-oriented than women (mean d = 1.18, a 'very large' difference, according to Hyde (2005) verbal designations). The Su et al. (2009) meta-analysis generated the smallest effect size (d = 0.86). However, as Su et al. note in their paper, a number of the interest inventories that fed into their meta-analysis used item selection strategies intentionally designed to reduce gender differences. Thus, the Su et al. estimate for the overall gender difference in people-versus-thing orientation is almost certainly an underestimate.

Patterns revealed by the three cross-cultural studies

The results of the three cross-cultural studies discussed earlier are reasonably consistent. Both Costa et al. (2001) and Schmitt et al. (2008) reported that gender differences in personality traits were larger in 'modern,' individualistic, gender-egalitarian societies, and smaller in 'traditional,' collectivistic, gender-inegalitarian societies. Schmitt et al. (2008) further found that cross-nation variations in sex differences resulted more from variations in men's than women's trait levels. Lippa's (2010) cross-cultural results were less consistent. The one personality trait that showed systematic cross-cultural variation in gender differences (agreeableness) conformed to the patterns revealed by the other two cross-cultural studies – i.e., larger differences in gender-egalitarian than in gender-nonegalitarian countries. The other traits (extraversion, neuroticism, and people-versus-thing orientation) showed gender differences that were stable across countries and unrelated to national indices of gender equality and economic development.

Why did Lippa's results sometimes differ from those of Costa et al. and Schmitt et al.? The answer is not clear. Possible moderating factors include: the different personality

measures used in each study; the different samples assessed, which varied in size and representativeness; and finally, language – the Costa et al. and Schmitt et al. studies translated personality tests into participants' native languages, whereas the Lippa study made use of data from an Internet study that was implemented in English.

Lippa's study, the only of the three cross-cultural studies that assessed gender-related interests, found that gender differences on the people–things dimension were extremely consistent and very large across nations (men were more thing-oriented and women more people-oriented in 53 of 53 nations) and did not vary with nation's levels of gender equality. Other research suggests that gender differences in interests tend to be stable over historical time as well (Hansen, 1988). These results converge to suggest a possible biologic component to gender differences in interests.

However, you 'slice and dice' the results from the three cross-cultural studies, they contradict social role theory's prediction that gender differences will be larger in societies with strong gender roles and weaker in societies with weak gender roles; this pattern was not present for *any* trait in *any* study. The results of the Costa et al. and Schmitt et al. studies and the results for agreeableness in Lippa's study were instead consistent with the predictions of attributional theory, social comparison theory, and some versions of evolutionary theory – that gender differences will tend to be larger in 'modern,' economically developed, gender-egalitarian societies. The strong cross-cultural consistency of gender differences in extraversion, neuroticism, and people-versus-thing orientation reported by Lippa (2010) is also consistent with the possible influence of biologic factors.

Although Costa et al. and Schmitt et al. reported systematic cross-cultural variation in gender differences in personality, they also reported a great deal of consistency in the *direction* of gender differences across cultures, at least for some traits. For example, Costa et al. reported higher female than male agreeableness in 25 of 26 nations; Schmitt reported higher female agreeableness in 47 of 55 nations; and Lippa reported higher female agreeableness in 53 of 53 nations. Similarly, Costa et al. reported higher female than male neuroticism in 25 of 26 nations; Schmitt reported higher female neuroticism in 53 of 55 nations; and Lippa reported higher female neuroticism in 52 of 53 nations. These sorts of patterns – highly consistent gender differences that vary somewhat in magnitude across countries – may reflect multiple influences – e.g., sociocultural influences superimposed on biologically based sex differences (see Lippa, 2009, for a discussion of how different patterns of biologic and social-structural influences may generate different cross-cultural patterns of gender differences).

Although data from the three cross-cultural studies discussed here tended to be consistent with the predictions of attributional and social comparison theories, cross-cultural findings for other kinds of gender differences are potentially problematic for these theories. Attributional and social comparison theories seem to imply that patterns of gender differences should be consistent across domains – i.e., they should be present for gender differences in personality, values, emotions, mate preference, sexual traits, etc.

Although studies often do report larger gender differences in gender-egalitarian than in gender-inegalitarian societies (see Guimond, 2008, for a review), there are many noteworthy exceptions. As described earlier, Lippa (2010) reported consistent and relatively invariant patterns of gender differences across cultures for extraversion, neuroticism, and people-versus-thing orientation. Schmitt (2005) and Lippa (2009) reported large mean gender differences in sociosexuality (restricted versus unrestricted attitudes toward sex), which were larger in *gender-inegalitarian* than in gender-egalitarian societies (thus providing at least one cross-cultural result that is partially consistent with the predictions of social role theory). Lippa (2009) reported highly consistent gender differences in self-reported

sex drive (men higher than women) across cultures, which did not vary with cultural levels of gender equality. Eagly and Wood (1999) and Lippa (2007) both reported consistent gender differences in how highly a mate's physical attractiveness is valued, and these gender differences were unrelated to cultural levels of gender equality. Attributional and social comparison theories need to address and explain these and other 'exceptions to the rule.'

Where Do We Go from Here?

Some methodological suggestions

Guimond et al. (2007) come close to stating that personality is not a stable attribute of people. Rather, it is a self-construal that is 'inherently fluid and flexible.' If this is true, then gender differences in personality, too, are inherently fluid and flexible and do not reflect 'real' and stable group differences (see also, Guimond, 2008).

In response, I suggest that it is useful to distinguish between self-construals of personality and actual personality. Clearly, self-reports of personality can be subject to biases, response sets, and social comparison processes. However, I believe they also reflect 'real' personality traits – i.e., consistent underlying patterns of individuals' thoughts, feelings, and behaviors. When viewed from this 'two levels' perspective, social comparison theory offers useful methodological recommendations to researchers interested in conducting cross-cultural studies on gender difference in personality and interests. Two recommendations are as follows: (i) To reduce self-construal biases, researchers should specify the comparison group that participants are to use when making self-ratings of personality. (ii) Researchers should strive to develop items that assess personality and interests in terms of behaviors rather than global traits (because self-ratings on global trait dimensions are more prone to self-construal processes; see Biernat, 2003, for a related discussion of how the judgment of group stereotypes can be affected by the rating scales used). When cross-cultural researchers implement the two previous recommendations, we will gain a better sense of the relative adequacy of attributional, social comparison, and evolutionary theories as explanations for cross-cultural variations in gender differences.

Guimond et al. (2007) never explicitly acknowledge a somewhat paradoxical conclusion that seems to follow from their theory: If people in gender-egalitarian cultures rate their personality more in relation to 'people in general' and people in gender-inegalitarian cultures rate their personality more in relation to members of their own sex, then people in western, gender-egalitarian cultures are providing the more *accurate* estimates of the size of gender differences in personality (think back to the example of self-reported height). In other words, the larger estimates of gender differences in personality coming from Western nations may actually be the more accurate estimates.

More cross-cultural research is needed

It is easy to criticize existing cross-cultural studies – e.g., for assessing restricted subject populations and nonrandom samples. At the same time, it is important to remember that large cross-cultural data sets are enormously difficult to obtain, and thus we should value the limited cross-cultural data we have. The three cross-cultural studies summarized here, despite their differing methods and samples, generated reasonably consistent results. Furthermore, they generated results that were generally in accord with meta-analytic reviews based on largely North American samples. Thus, we should not dismiss their findings too readily.

More research should investigate changes in gender differences over time

Because of space limitations, I have not focused as much attention on the ‘when’ of gender differences as on the ‘where.’ My hunch is that gender differences in personality will prove to vary more over historical time than gender differences in interests (e.g., see Hansen, 1988; for an analysis of interest data). Twenge (1997, 2001) conducted two interesting meta-analytic studies showing that gender differences in dominance and masculine instrumentality changed over key periods of the 20th century, largely because of shifts in women’s scores (a finding in interesting counterpoint to recent cross-cultural results showing that men may vary more than women in personality *across cultures*; see Schmitt et al., 2008). Given that decades’ worth of personality and interest data exist in various archives, researchers should conduct more ‘cross-temporal meta-analyses.’ Key questions to address are as follows: How malleable are gender differences over time? Have women and men changed equally as societal gender roles have shifted over the past century? Have gender differences in personality changed more over time than gender differences in interests, and have gender differences in some personality and interest traits shifted more over time than gender differences in other traits?

The need to move beyond the ‘Big Five’

Research on gender differences in personality needs to focus more attention on Big Five *facets* and on traits that may not have good representations in the Big Five model, such as sensation seeking (Zuckerman, 1979), social dominance orientation (Sidanius, Pratto, & Bobo, 1994), trait aggressiveness (Buss & Perry, 1992), and the ‘dark triad’ of narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002). Future research should also probe links between gender differences in personality and gender differences in mental illness (see Williams & Gunn, 2006). It is probably no accident that (i) women score higher than men on neuroticism and (ii) women suffer more from depression and anxiety disorders than men do. Nor is it likely to be an accident that (i) men score higher on aggressiveness and lower on agreeableness than women do and (ii) men display higher rates of antisocial behavior than women do.

The need to test explicit models that include predictions about men’s and women’s mean trait levels and men’s and women’s trait variability

I have argued recently that gender researchers need to develop more explicit models of how men’s and women’s behaviors vary across cultures (see Lippa, 2009; for a discussion of five explicit models). Such models should focus not only on *gender differences*, but also on men’s and women’s *mean trait levels* across cultures and on men’s and women’s *levels of trait variability* across cultures. Requiring such precise, multilevel predictions will lead to clearer theoretical thinking and less ‘hand waving’ in discussions of gender differences across cultures. It will also help researchers test more decisively among competing theories of gender differences. As I have suggested elsewhere (Lippa, 2007, 2009), such model testing may very well yield ‘messy’ results – e.g., results that show both biologic and social–environmental factors contributing to gender differences, to varying degrees for different traits, and varying kinds of interactions between biologic and social–environmental factors. Indeed, I will go on the record here. I predict that such ‘messiness’ will reign in future research on gender differences in personality and interests. If my prediction proves true, we should not be dismayed. Rather, we should simply say, ‘Such is life.’

Short Biography

Richard A. Lippa is a Professor of Psychology at California State University, Fullerton. The author of many research articles on gender, masculinity, and femininity; Lippa was a National Science Foundation Graduate Fellow at Stanford University, where he received his Ph.D. in Social Psychology. Lippa is author of the 2005 book, *Gender, Nature, and Nurture* (2nd Ed.). In 2005, Lippa served as a research consultant to the BBC documentary, *Secrets of the Sexes*. In this role, he helped design a BBC Internet survey on gender differences, which collected data from more than 200,000 participants worldwide. In a series of papers, Lippa used data from the BBC Internet survey to investigate the cross-cultural consistency of gender differences in personality, sexuality, mate preferences, and cognitive abilities.

Endnote

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