# UNIVERSAL AND VARIABLE PATTERNS OF GENDER DIFFERENCE

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Any observer of any human society today is bound to notice differences between females and males. The differences usually go well beyond physical appearance and dress. No society assigns women and men exactly the same roles, nor does any society give women the same privileges as men. But while all societies make something of the differences between women and men, not all create the same degree of role divergence. In some societies differences appear minimal; men and women do much the same things. In others, men and women live their daily lives quite separately, not only spending much of the day in sex-segregated quarters, but in performing completely different tasks. Differences are not just in culturally as signed patterns of dress and role expectations. If we look beyond the obvious cultural assignments and begin to study individual behaviors and responses to cognitive and perceptual tests, other differences emerge. In what arenas are there female/male differences? Just how universal or variable are these differences? While some differences direct results of cultural assignment, the etiology of other differences is not so clear. Can we attribute these other differences to the press of cultural roles and expectations and/or are there biological bases for these differences?

But before we get to these questions, let's back up a minute. We are so used to thinking about the "naturalness" of female/male differences that we may forget that biological differences in "primary sex characteristics" (sex organs) do not necessarily mean that the sexes will differ also in their "secondary sex characteristics" (e.g., height, weight) or social behavior. In some species the size and coloring of females and males, and even their behavior, may be so similar that experts cannot distinguish the sexes, except by watching who does what to whom during sex. Among our primate cousins, gibbon females and males do not differ in size and appearance, but others such as orangutans have striking sexual dimorphisim. Orangutan males weigh more than twice as much as females, and only males have large cheek pads, throat pouches, beards, and long hair. Indeed, the males in all the great ape species (orangutans, chimpanzees, gorillas) are larger than females. Just as gibbons manifest little physical dimorphism, the two sexes also behave much the same way, except when it comes to infant care. Neither sex dominates the other; and both, as a bonded pair, defend their territory against intruders.[1] The point is that femaleness and maleness does not automatically imply substantial differences in behavior just because the reproductive organs differ. However, this does not mean that biology is

irrelevant. Evolution presumably favored different degrees of sexual dimorphism in the various primate lines as adaptations to different physical and social environments. Humans as a species are not as sexually dimorphic as orangutans or gorillas, but we are more dimorphic than gibbons. These evolutionary differences should remind us that degree of dimorphism can change over time. After all, all the primates once shared a comon ancestor. If the role requirements of human females and males become more similar, there is every reason to expect that physical as well as behavioral dimorphism in humans should decline over time.

Currently, the differences between females and males in humans tend to be referred to as *gender differences*, rather than as sex differences. This change in terminology reflects the idea that male-female differences in humans stem ultimately from cultural experiences (including role assignments) and cultural expectations (including future role assignments), rather than from biological differences. Similarly, the term *gender roles* is now preferred over sex roles. The term *sex differences* is often still used to refer to differences that are thought to be biological in nature.[2] Unfortunately, biological and cultural influences are not always clearly separable, so it is sometimes hard to know which term to use. As long as societies treat females and males differently, we may not be able to separate the effects of biology from the effects of culture, and both effects may be present. In this chapter I discuss what we know cross-culturally about how and why females and males differ physically, in gender roles, and in personality. Although I focus here on differences and similarities between females and males, it is important to keep in mind that not all cultures conceive of gender as including just two categories. Sometimes "maleness" and "femaleness" are thought of as opposite ends of a continuum, or there might be three or more categories of gender (such as "female," "male," and "other").[3]

## *Physique and Physiology*

In what ways are humans sexually dimorphic? Females have proportionately wider pelvises. Males typically are taller and have heavier skeletons than females. Females have a larger proportion of their body weight in fat; males have a larger proportion of body weight in muscle. Males typically have greater grip strength, proportionately

larger hearts and lungs, and greater aerobic work capacity (greater maximum uptake of oxygen during exercise).

There is a tendency in our society to view "taller"and "more muscled"as better, which may reflect the bias toward males in our culture. Natural selection may have favored these traits in males, but different ones in females. For example, because females bear children, selection may have favored earlier cessation of growth (and therefore less ultimate height) in females so that the nutritional needs of a fetus would not compete with a growing mother's needs.[4] Females achieve their ultimate height shortly after puberty, but boys continue to grow for years after puberty. Similarly, there is some evidence that females are less affected than males by nutritional shortages, presumably because they tend to be shorter and have proportionately more fat.[5] Natural selection may have favored those traits in females because they resulted in greater reproductive success.

Female and male athletes can build up their muscle strength and increase their aerobic work capacity through training. Given this capability, cultural factors such as how much a society expects and allows males and females to engage in muscular activity could influence the degree to which females and males end up differing muscularly and in aerobic work capacity. Similar training for females and males may account for the recent trend toward decreasing differences between females and males in certain athletic events, such as marathons and swim meets. Even when it comes to female and male physique and physiology, then, what we see may be the result of both culture and genes.[6]

# *The Consistencies of Gender Role Assignment*

## Economic Activities

Hypothetically, every society could assign women and men the same economic activities to perform, or these activities could be assigned arbitrarily to one sex or the other, varying from one society to another. The facts are somewhat different, however. Not only do societies generally assign men and women different work,

but the cross-cultural evidence also suggests that there are consistent patterns in the division of labor by gender.

Let us first consider subsistence and other economic activities. Women usually gather wild plants, prepare plants for eating (e.g., grind grain), prepare beverages (e.g., tea, beer), produce dairy products such as butter and cheese, cook, fetch water, obtain fuel for heating and cooking, launder, and spin yarn. Men almost always hunt large land and aquatic animals, hunt birds, trap animals, lumber wood, mine and quarry minerals, prepare and transform wood, metal, stone, shell, and bone into products. Men usually fish, tend large animals, clear land and prepare the soil for planting, collect wild honey, butcher animals, build houses, and make net and rope.[7] Of course, not all of the activities mentioned here are present in all societies. For example, butter and cheese may not be made, and minerals may not be mined.

Four major explanations have been suggested for these division of labor patterns: 1) physical capacity — men typically have greater muscular strength and higher aerobic work capacity, so they will be assigned work that requires such capacity;[8] 2) compatability with childcare — women need to breast-feed infants and therefore they will tend to be assigned activities that are interruptible and not dangerous;[9] 3) economy of effort — it is advantageous for the gender that starts an activity to do other things related to it in the production sequence;[10] 4) expendability — because the number of women, not men, determines the reproduction potential, it is advantageous to assign men to the more dangerous activities.[11] While all these theories have some plausibility, it is important to note that three of the theories explain mostly the same patterns. For example, strength differences, incompatibility with childcare, and expendability all explain why men rather than women would usually hunt, fish, lumber, mine, quarry, clear land, etc. Economy of effort theory might better explain some male activities such as net making or the making of musical instruments, which are usually constructed out of wood which men lumber. But until researchers measure the strength required, or the degree of incompatibility of each task with childcare, or the danger of each task, it is difficult to decide between these various theories. They may all explain some of the different ways that labor is usually divided between the genders.

## Childcare

Since infants the world-over are usually nursed, the economy of effort theory would suggest that it is more efficient to assign other aspects of infant care to women also. Indeed, although few societies have mothers caring exclusively for infants (3 percent), in most societies (77 percent) mothers are the principal caretakers.[12] And mother's helpers are usually female. As the child gets older mothers begin to do less childcare—caretaking is largely taken over by girls, often older siblings, and other women. But caretaking is still primarily a female job.

## War and Political Activities

In almost every society we know about, men rather than women are the leaders in the political arena. One cross-cultural survey indicates that in approximately 85 percent of the surveyed societies, only men were leaders. In the societies in which some women occupied leadership positions, the women were either outnumbered by or less powerful than the men leaders.[13] Whether or not we consider warfare to be part of the political sphere of life, we find an almost universal dominance of males in that arena. In 87-88 percent of the world's societies, women never participate actively in war.[14]

Even in *matrilineal* societies, which seem to be oriented around women, men usually occupy political positions. For example, among the Iroquois of what is now New York State, women had control over resources and a great deal of influence. But men held political office, not women. The highest political body among the League of the Iroquois (which comprised five different tribal groups) was a council of fifty male chiefs. Although women could not serve on the council, they could nominate, elect, and impeach their male representatives. Women also could decide between life or death for prisoners of war, they could forbid the men of their households to go to war, and they could intervene to bring about peace.[15]

Why have men (at least so far) almost always dominated the political sphere of life? Some have suggested that men's role in warfare gives them the edge in all kinds of political leadership, particularly because they control weapons, an important resource.[16] But there is little evidence that force is usually used to obtain leadership positions.[17] Still, warfare may be related to political power for another reason. Warfare clearly affects survival and it occurs regularly in most of the societies we know about. Decision making about war may therefore be among the most important kinds of politics in most societies. If this is so, it may be advantageous to have those who know the most about warfare making decisions about it. As for why males and not females usually engage in fighting, we may refer to three of the possible explanations of the worldwide patterns in the gender division of labor. Warfare, like hunting, probably requires strength (for throwing weapons) and quick bursts of energy (for running). And certainly combat is one of the most dangerous and uninterruptible activities imaginable, hardly compatible with child care. Also, even if they do not at the moment have children, women may generally be kept out of combat because their potential fertility is more important to a population's reproduction and survival than their potential usefulness as warriors.[18] So, the strength theory, the compatibility theory, and the expendability theory might all explain the predominance of men in warfare. But although these theories suggest why most warriors should be male, they do not really explain why warriors are exclusively male in nearly all societies.[19]

Two other factors may be involved in male predominance in politics. One is the generally greater height of men. Why height should be a factor in leadership is unclear, but a number of studies suggest that taller persons are more likely to be leaders.[20] Finally, there is the possibility that men dominate politics because they get around more than women in the outside world. Men's activities typically take them farther from home; women tend to work more in and around the home. If societies choose leaders at least in part because they know more about the larger world, then men will generally have some advantage. In support of this reasoning, Patricia Draper has found that settled-down !Kung bands, where women no longer engaged in long-distance gathering, women seem to have lost much of their former influence in making decisions.[21] Involvement in child care may also detract from such influence. In a study of village leadership among the Kayapo of Brazil, Dennis Werner found that women with heavy child-care burdens are less influential, perhaps because they have fewer friends and miss many details of what is going on in the village.[22]

# *Consistencies in Gender Differences in Personality*

Reporting on three tribes in New Guinea, Margaret Mead claimed that "many, if not all, of the personality traits we have called masculine or feminine are as lightly linked to sex as are the clothing, the manners, and the form of head-dress that a society at a given period assigns to either sex."[23] Mead thought that there are *no universal* or even near-universal personality differences between the sexes; rather, societies are free to create differences or to minimize them. Mead described Arapesh women and men as essentially alike: both sexes were gentle, cooperative, and nurturing. Mundugumor females and males, too, were similar, but in their cases both were violent and competitive. Mead reported substantial female-male differences among the Tchambuli, but of a sort opposite to what we might expect. Women, the main economic providers, were domineering, practical, and impersonal. Tchambuli men were sensitive and delicate, devoting much of their time to artistic pursuits.

Since Mead's work, questions have been raised about her conclusions. Were her descriptions of these three New Guinea cases accurate? We don't have independent evidence about the specific communities she studied, but we do have a reanalysis of Mead's notes on the Mundugumor by Nancy McDowell, as well as the results of McDowell's own fieldwork in a village near the one Mead wrote about. These materials reveal nothing that contradicts Mead's description.[24] But even if Mead's descriptions are accurate, we must still ask whether her broader conclusion, too, is accurate: Is personality as lightly linked to biological sex, as she suggested? The answer depends on what is meant by "linked." If we mean that temperament is *randomly* connected to biological sex, the answer has to be no. Systematic behavior observations have enabled investigators to capture minute details of behavior for a substantial number of females and males, across various societies. Conclusions about gender differences, in aggressiveness for example, no longer depend on subjective impressions, but emerge from counting the times particular individuals try to hurt or injure others during specific observation periods. Research based on such systematic observation does not support Mead's view that there are no consistent gender differences in temperament. To the contrary, some behavioral differences appear consistently, even in

quite diverse societies. However, this is not to say that culture does not have a lot to do with how temperament is shaped.

Unfortunately, as we shall see, the consistencies we observe in gender differences do not tell us anything definitive about their probable *causes*. We turn now to those differences that show consistent differences by gender.

## Consistent Differences in Social Behavior

The most consistent difference between boys and girls is in regard to aggression: systematic observations indicate that boys more frequently try to hurt others, physically or verbally.[25] In a comparative study of children's behavior known as the Six Cultures project, this difference appeared as early as three to six years of age.[26] The six communities studied were Nyansongo in Western Kenya (Gusii speakers), Juxtlahuaca in Oaxaca, Mexico (Mixtecan speakers), Tarong, in the Luzon area of the Philippines (Ilocano speakers), Taira in Okinawa (Okinawan speakers), Khalaphur in Uttar Pradesh India (Hindi speakers) and Orchard Town, New England (American English speakers). Other observations of the same kind are available for the Luo of Kenya, an Israeli kibbutz, and the !Kung in southwest Africa.[27] A more recent four-culture comparison of the Black Carib of Belize, the Logoli of Kenya, the Newar of Nepal, and the Samoans of American Samoa replicates the finding that boys generally exhibit more aggression in boys.[28] Research in the United States yields the same result; many observational and experimental studies in this country indicate that boys are more aggressive.[29]

Differences in aggressiveness decrease with age, but do not completely disappear in adulthood.[30] The studies upon which we base these conclusions all draw from observational evidence, interviews, or experiments. They do not take relatively rare homicidal events or socially approved violence such as war into account. But if we added these other arenas, males would have even higher rates of aggression. Cross-culturally, males are by far more responsible than females for incidents of homicide. Daly and Wilson looked at same-sex homicide rates in 22 societies, and found that male-male homicides far outnumbered female-female ones; even in the society with the smallest difference, male-male homicides were 11 times more frequent! These numbers actually under-represent male homicides because they omit large numbers of male-female homicides.[31] And then there is rape, which Gwen Broude found

occurs "commonly" in 41% of societies about which we have some relevant information.[32]

Still other differences have turned up with considerable consistency, although we have to be more cautious in accepting them either because they have not been documented as well or because there are more societies that are exceptions. For example, there is some evidence that girls tend to exhibit more responsible, nurturant, helpful behavior. They are also more likely to conform to adult wishes and commands, whereas boys more often attempt to dominate others and get their own way. In play, boys and girls display a preference for their own gender; and girls play in smaller groups and maintain less physical distance from each other than boys.[33]

We must exercise some caution in interpreting these studies. Consistent sex differences are not necessarily characteristic of *all* societies; there are invariably cases that do not conform to the general pattern. For example, while girls are generally more nurturant than boys in many communities, the Six Cultures project found that in Nyansongo, Kenya (a Gusii community), boys actually offered help and support to others more often than did girls. [34] For reasons we shall discuss below, they may have been unexpectedly helpful in Nyansongo because families frequently called upon them to help care for young children, which is usually girls' work.

Still, how are we to account for the general consistency with which some gender differences occur? Many writers and researchers are prepared to attribute them to biological causes, and greater male aggressiveness is most often singled out as a particularly good candidate for biological explanation because it appears so early in life.[35] But the logic here is less than compelling, given that many societies socialize the genders differently from the moment of birth.[36] Even when objective observers discern no obvious "personality" differences between female and male newborns, parents often claim to.[37] Parents may, perhaps unconsciously, expect and *want* boys and girls to be different and may therefore encourage differences early in socialization. Thus, even the earliest differences could be learned.

To be sure, there is considerable evidence of biological influence, but most of it comes from experimental research on aggression in nonhuman animals. These experiments suggest that the male hormone androgen may be partly responsible for higher levels of aggression. In some experiments, females injected with androgen before or shortly after birth, when their sexual organs are developing, behave more aggressively when they are older than

other females. Can this also be true of humans? Some researchers have looked at human females "androgenized" in the womb because of drugs given their mothers to prevent miscarriage. By and large, the results of these investigations are similar to those of the experimental studies—androgenized females appear more aggressive.[38] Some investigators believe these results indicate that the male/female difference in aggression is biologically caused. [39] But others feel that these findings are not conclusive because females with more androgen may manifest disturbed metabolic systems in general, and that alone could give rise to aggressiveness. Furthermore, androgen-injected females resemble males more than other females--for example, they may have masculinized genitalia. Perhaps they behave more like males, then, because conspecifics treat them like males and act more aggressively toward them.[40]

What evidence do we have that socialization contributes to gender differences in aggression among humans? Cross-cultural studies reveal that while *some* societies clearly do train boys to be more aggressive than girls, apparently *most* do not.[41] The fact that only *some* train girls and boys differently in this regard can hardly account for the fact that males are more aggressive than females in *most* societies. But these studies are based on ethnographic accounts, and aggression or other "masculine" traits may be engendered in ways too subtle for anthropologists to pick up on and describe in their ethnographic reports.

Consider the possibility, for example, that girls and boys *learn* to behave differently because their parents ask them to do different kinds of work. In other words, they may end up behaving differently because their work assignments call for dissimilar behaviors. As a matter of fact, ethnographic evidence suggests that, in societies where children do a great deal of work, they generally display more responsible and nurturant behavior. Girls may display such behavior more than boys because girls are almost always asked to do more.[42] If this reasoning is correct, we should also find that where boys are asked to do girls' work, they may learn to behave more like girls.

My field study of Luo children in Kenya supports this expectation.[43] Parents asked girls to baby sit, cook, clean house, and fetch water and firewood. Boys did little work around the house; their traditional work was herding cattle. But most families in the community I studied had few cattle. By chance, more boys than girls had been born, and many mothers without daughters had to require their sons to do girls' chores. It turned out that

much of the behavior of those boys who did girls' work was intermediate between the behavior of other boys and the behavior of girls. Boys who did girls' work were less aggressive, less domineering, and more responsible than other boys—*even when they were not working at girls' chores*. So it is possible that task assignment has an important influence on how girls and boys learn to behave. Other subtle forms of socialization should be investigated as well. We need to look closely, for example, at whether newborn and infant boys are handled more roughly than girls, at whether they are allowed to rough-house more as youngsters (boys typically do rough-house more than girls), at the kinds of toys parents give their children (e.g., trucks versus dolls)—these differences could all subtly and differently shape the behavior of boys and girls.[44]

A major influence on children may also be the company they keep. Findings from the Six Cultures project suggest that being around peers (which boys have more time to do) generally increases aggressive behavior; being around adults generally decreases aggression, and being around younger siblings generally increases nurturant behavior.[45]

## Consistent Gender Differences in Cognition, Perception, and Emotion

Females and males show few cognitive and perceptual differences. But those few show up with considerable consistency. One is in the area of visual/spatial abilities, where males have the edge.[46] Such abilities are measured by tests involving mazes, three-dimensional pictorial representation, spatial rotation of objects and drawings, and reconstructing three-dimensional objects.

A second area, which may be related to the first, is called "field independence"/"field dependence." These terms, referring to perceptual style, might best be described in terms of the tests that measure them. One test--the "rod-and-frame" test--asks subjects in a darkened room to say when a lighted "rod"inside a lighted "frame" is "straight-up-and-down." Subjects are deliberately disoriented by being placed on a chair that is rotated while the frame and rod are moved into many different positions. Persons are classified as "field dependent" if they consistently think the rod is straight-up-and-down when it is parallel to the

frame, even though the frame is actually tilted away from the vertical. Persons are classified as "field independent" if they judge the rod to be "straight-up-and-down" if it is close to the vertical, even though it does not line up with the frame. In other words, a field dependent person makes a perceptual judgment influenced by the surroundings (the "field"); the field independent person makes a perceptual judgement about the object independent of the surroundings. A related test, the embedded figures test, asks subjects to find a simple figure within a more complicated drawing. Field independent individuals seem to do this easily; field dependent individuals, perhaps because they appear to see the complicated figure as a whole, find it difficult to separate out a part of it.[47]

Data from the United States are fairly consistent in showing that females typically are more field dependent, while males are generally more field independent. Many communities in other cultures show the same pattern of gender difference. For example, sex differences have been reported among Cree and Athapaskan adults, Temne mixed age groups, Telefomin people of highland New Guinea, two Nigerian communities, traditional Tsimshian, older Nsenga Africans, Fijian schoolchildren, and Mexican school children. However, a gender difference appears to be absent in societies heavily dependent on food collection--among Eskimo and the Arunta of Australia. Witkin and Berry suggest that gender differences appear greatest in sedentary, agricultural societies and least in migratory, hunting societies.[48] What may account for these gender differences in visual/spatial abilities and in field independence/dependence? Before I turn to some possible explanations, I should note that some researchers suggest that field independence/field dependence is a manifestation of visual/spatial ability.[49]

Most of the biological explanations offered to explain female-male visual/spatial differences (e.g., in terms of brain lateralization, prenatal hormones, hormones at puberty) are questionable because of inconsistent evidence. For example, such explanations cannot easily accommodate the fact that gender differences have narrowed over time, or that training can considerably improve female performance. Nonetheless, some intriguing findings warn against too quick a dismissal of biological factors. One is that visual/spatial test scores vary for women in different phases of the menstrual cycle.[50]

So far, relatively few studies have directly investigated socialization factors that may increase visual/spatial skill. However, there is some evidence that children who grew up playing with more "masculine" toys (e.g., blocks, cars) have better

visual/spatial skills; also the more a child spends time away from the household, the better such skills.[51] Field dependence is predicted by tight parental control and parental emphasis on conformity. Parental control creates a strong tie between the parent's actions and the child's actions; it seems that the social tie parallels the perceptual—objects are also constrained by their surroundings.[52] These socialization explanations might predict why girls typically do not do as well on visual/spatial tests and more often score field dependent. In many societies, females are more tightly controlled and spend more time closer to home. Perhaps it is significant that food collecting societies show few gender differences in field independence/dependence. Such societies may need to have both males and females learn to negotiate their way through space to return home safely (women usually gather away from home; men hunt and fish away from home); food collectors also emphasize independence, rather than obedience, in childtraining.[53]

Turning now from perception to emotion, some theorists suggest that women are more apt to be concerned with interpersonal relationships, and to have more empathy for the feelings of others.[54] To date, studies outside the United States, in Israel, and in some Asian countries provide considerable support for this expectation.[55] Also consistent with this theory is the fact that, in a large number of studies, females showed themselves better at understanding nonverbal cues of others and in expressing emotions in their faces.[56] In recounting their dreams, women describe more emotion than men.[57] In 25 different cultures, women display more positive affect and openness to feelings; but women also are prone to more anxiety and depression.[58]

Given these gender differences it might be tempting to suggest that some of the gender division of labor results from difference in ability. After all, it is easy to speculate that men may excel at hunting and herding because they have superior visual/spatial abilities and possess a field independent style in perception. Women may excel at child tending because their perceptual style (field dependence) enables them to perceive the emotions of others (empathy is a perceived connection to others).

However, differences in cognitive, perceptual, and emotional style may result largely from differences in training and the early performance of tasks. If boys are allowed to roam far from home because they are less constrained and/or they have less work to do, they may develop better visual/spatial skills. A higher involvement in physical sports which involve an object moving through space--balls, sticks, arrows--could enhance such skills. If

girls caretake infants and children more, they may be more likely to learn to understand the needs of another. Recall that Luo boys who did more girls' work were significantly less aggressive and more responsible than boys who did little girls' work. To evaluate these various possibilities, we may need longitudinal research that evaluates these abilities before and after females and males take on different roles.

## *Variation in Gender*

While I have stressed the consistencies in gender differences, we should remember that in many aspects of life females and males perform similar tasks. While men hunt and women largely gather, the vast majority of people in the world now depend on agriculture. And with respect to agriculture, we find few tasks that clearly separate the genders except for land clearing and preparing the soil by plowing. In some societies men do most of the agriculture, in others women do. And when the society depends mostly on agriculture, women or men may be the main "breadwinners." Even in those activities that seem so exclusively male, like hunting, we can find examples of women regularly hunting. Among the Agta of the Philippines, for example, women regularly hunt wild pig and deer. Women alone or in groups kill almost 30 percent of the large game.[59] And although men are almost always the warriors around the world, there are examples of women engaging in combat. In native North America, such societies included the Comanche, Crow, Delaware, Fox, Gros Ventre, and Navajo. In the Pacific, there were women warriors among the Maori of New Zealand, on Majuro in the Marshall Islands, and among the Orokaiva.[60] These examples suggest that gender similarity can be more or less likely, depending on the culture. Recall that objective observers can find little differences in the behavior of female and male infants, despite the fact that parents insist that their boy and girl babies have completely different personalities.[61]

## *Beliefs That Are Not Supported*

Before we leave the subject of behavior differences, we should note some widespread beliefs about them that turn out to be unsupported. Some of these mistaken beliefs are that girls are more dependent than boys, that girls are more sociable, and that girls are more passive. The

results obtained by the Six Cultures project cast doubt on all these notions.[62] First, if we think of dependency as seeking help and emotional support from others, girls are generally no more likely to behave this way than boys. To be sure, the results do indicate that boys and girls have somewhat different styles of dependency. Girls more often seek help and contact; boys more often seek attention and approval. As for sociability, which means seeking and offering friendship, the Six Cultures results show no reliable differences between the sexes. Of course, boys and girls may be sociable in different ways because boys generally play in larger groups than girls. As for the supposed passivity of girls, the evidence is also not particularly convincing. Girls in the Six Cultures project do not consistently withdraw from aggressive attacks or comply with unreasonable demands. The only thing that emerges as a female/male difference is that older girls are less likely than boys to respond to aggression with aggression. But this finding may not reflect passivity as much as the fact that girls are less aggressive than boys--which we already know.

## *What Needs to Be Done*

We still have a long way to go to verify whether some of the observed differences between females and males hold up cross-culturally. But it is one thing to establish the cross-cultural consistency of gender differences—it is quite another to figure out the causes of those differences, because biological sex is not clearly separable from differential social and cultural treatment. However, in my view researchers have not tried hard enough to use variation from one society to another to try to untangle the causal factors. For example, if we suspect that differential task assignment might account for why some societies have large gender differences in behavior, we should systematically choose societies to study that vary in their degree of differential task-assignment to see if gender differences widen with increasing differentiation. At the same time, within each of the societies studied, we should study individual-variation in task-assignment to see if gender differences are wider between girls who do the most "feminine" work and boys who do the most "masculine" work. Biological factors, such as hormone levels, also vary amongst individuals. Unfortunately, researchers tend to ignore the kind of theory (biological or social) they do not like or are unfamiliar with. If we want to do a better job of understanding gender differences, possible biological and social theories should be studied simultaneously to see which are more predictive.

# NOTES

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12. These numbers were tabulated by Thomas S. Weisner and Ronald Gallimore, "My Brother's Keeper: Child and Sibling Caretaking," *Current Anthropology* 18 (1977): 170. The original data were coded by Herbert Barry III and Leonora Paxson, "Infancy and Early Childhood: Cross-Cultural Codes 2." *Ethnology* 10 (1971): 466-508. In only 7 percent of societies were mothers less important than other caretakers. The numbers do not sum to 100 because 13 percent of the cases could not be coded.

13. Martin K. Whyte, "Cross-Cultural Codes Dealing with the Relative Status of Women,'' *Ethnology* 17 (1978): 217.

14. Ibid and David B. Adams, "Why There Are So Few Women Warriors," *Behavior Science Research* 18 (1983): 196-212.

15. Judith K. Brown, "Economic Organization and the Position of Women among the Iroquois,'' *Ethnohistory* 17 (1970): 151-67.

16. Peggy R. Sanday, "Female Status in the Public Domain,'' in Michelle Z. Rosaldo and Louise Lamphere, eds., *Woman, Culture, and Society* (Stanford, CA: Stanford University Press, 1974), pp. 189-206; and William T. Divale and Marvin Harris, "Population, Warfare, and the Male Supremacist Complex,' *American Anthropologist* 78 (1976): 521-38.

17. Naomi Quinn, "Anthropological Studies on Women's Status,'' *Annual Review of Anthropology* 6 (1977): 189-90.

18. Susan Brandt Graham, "Biology and Human Social Behavior: A Response to van den Berghe and Barash,'' *American Anthropologist*, 81 (1979): 357-60.

19. The combination of internal warfare and patrilocality may be a better explanation, because in such societies in-marrying women may come from "enemy" communities and men may try to exclude them anything pertaining to war. Adams, "Why There Are So Few Women Warriors," presents evidence that societies in which women participate in war are very unlikely to have internal warfare (which is associated with patrilocality). For further exploration of why war is gendered, see Joshua S. Goldstein, *War and Gender: How Gender Shapes the War System and Vice Versa* (New York: Cambridge University Press, 2001).

20. Dennis Werner, "Chiefs and Presidents: A Comparison of Leadership Traits in the United States and among the Mekranoti-Kayapo of Central Brazil,'' *Ethos* 10 (1982): 136-48; and Ralph M. Stogdill, *Handbook of Leadership: A Survey of Theory and Research* (New York: Macmillan, 1974), cited in ibid.; see also W. Penn Handwerker and Paul V. Crosbie, "Sex and Dominance,'' *American Anthropologist* 84 (1982): 97-104.

21. Patricia Draper, "!Kung Women: Contrasts in Sexual Egalitarianism in Foraging and Sedentary Contexts,'' in Rayna R. Reiter, ed., *Toward an Anthropology of Women* (New York: Monthly Review Press, 1975), p. 103.

22. Dennis Werner, "Child Care and Influence among the Mekranoti of Central Brazil,'' *Sex Roles* 10 (1984): 395-404.

23. Mead, *Sex and Temperament in Three Primitive Societies* (New York: Mentor, 1950; orig. published in 1935), p. 206.

24. Nancy McDowell, "Mundugumor: Sex and Temperament Revisited," in Melvin Ember and Carol R. Ember, eds., *Portraits of Culture: Ethnographic Originals*, in Carol R. Ember and Melvin Ember, *New Directions in Anthropology*, eds. (Upper Saddle River, NJ: Prentice Hall, CD-ROM, 2003). One indication of female/male similarity in temperament, in 1981, was the development of a coed basketball team.

25. Kaj Björkqvist, "Sex Differences in Physical, Verbal, and Indirect Aggression: A Review of Recent Research" *Sex Roles* 30 (1994), 177-188, claims that the differences in aggressiveness are largely qualitative rather than quantitative. If indirect forms of aggression were studied (such as excluding someone from a group or

negative gossip, the quantitative sex difference might disappear. We should note, however, that there is not sufficient research on indirect aggression to evaluate this interpretation. For a more extensive review of the cross-cultural research on aggression, see Marshall H. Segall, Carol R. Ember and Melvin Ember, "Aggression, Crime, and Warfare," in John W. Berry, Marshall H. Segall, and Cigdem Kagitçibasi, eds. *Handbook of Cross-Cultural Psychology*, 2nd edition. Volume 3, Social Behavior and Applications (Boston: Allyn and Bacon, 1997), pp. 213-254.

26. Beatrice B. Whiting and Carolyn P. Edwards, "A Cross-Cultural Analysis of Sex Differences in the Behavior of Children Aged Three through Eleven," *Journal of Social Psychology* 91 (1973): 171-188. The significant sex difference is in "egoistic" aggression, for a person's own purposes. Aggression undertaken for the good of the family or another person is "prosocial" aggression (e.g., spanking a child for walking into the street when cars were coming or for failing to perform a required duty.)

27. Carol R. Ember reports differences among Luo girls and boys in "Feminine Task-Assignment and the Social Behavior of Boys," *Ethos* 1 (1973): 424-439; for differences on an Israeli kibbutz, see Melford Spiro, *Children of the Kibbutz* (Cambridge: Harvard University Press, 1958; second edition 1975); and N. G. Blurton-Jones and M. Konner report such differences among the !Kung in "Sex Differences in Behavior of London and Bushman Children," in R. P. Michael and J. H. Crook, eds., *Comparative Ecology and Behaviour of Primates* (London: Academic Press, 1973), pp. 690-750.

28. The results of the four-culture comparison are reported in Robert L. Munroe, Robert Hulefeld, James M. Rodgers, Damon L. Tomeo, and Steven K. Yamazaki, "Aggression Among Children in Four Cultures," *Cross-Cultural Research 34* (2000): 3-25.

29. Eleanor E. Maccoby and Carol N. Jacklin, *The Psychology of Sex Differences* (Stanford CA: Stanford University Press, 1974). A more recent analysis of United States and Canadian aggression research by Janet Sibley Hyde, "Gender Differences in Aggression," in Janet Shibley Hyde and Marcia C. Linn, eds., *The Psychology of Gender: Advances Through Meta-Analysis* (Baltimore: The Johns Hopkins University Press, 1986), pp. 51-66, also supports this claim.

30. Hyde, "Gender Differences in Aggression." Consistent with the United States data, and on the basis of ethnographic accounts, Ronald Rohner, "Sex differences in Aggression: Phylogenetic and Enculturation Perspectives," *Ethos* 4 (1976): 58-72, also suggests that gender differences in behavior narrow in adulthood. (I assume he is not including the domain of war or rare events such as homicide.)

31. Daly, Martin and Margo Wilson, *Homicide* (New York: Aldine de Gruyter, 1988), pp. 147-148.

32. Gwen J. Broude and Sarah J. Green, "Cross-Cultural Codes on Twenty Sexual Attitudes and Practices." *Ethnology* 15 (1976): 409-429.

33. For a more extensive discussion of behavior differences and possible explanations for them, see Carol R. Ember, "A Cross-Cultural Perspective on Sex Differences," in Ruth H. Munroe, Robert L. Munroe, and Beatrice B. Whiting, eds., *Handbook of Cross-Cultural Human Development* (New York: Garland Press, 1981), pp. 531-580; Carolyn Pope Edwards, Lisa Knoche, and Asiye Kumru, "Socialization of Boys and Girls in Natural Contexts" in Carol R. Ember and Melvin Ember, eds., *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures* (New York: Kluwer/Plenum, forthcoming) point out that children seem to voluntarily segregate by gender.

34. Whiting and Edwards, "A Cross-Cultural Analysis of Sex Differences in the Behavior of Children Aged Three through Eleven."

35. Ibid.

36. See, Carol R. Ember, "A Cross-Cultural Perspective on Sex Differences," p. 533.

37. J. Z. Rubin, F. J. Provenzano, and R. F. Haskett, "The Eye of the Beholder: Parents' Views on the Sex of New Borns," *American Journal of Orthopsychiatry* 44 (1974): 512-19.

38. For a fuller discussion of this evidence see, Lee Ellis, "Evidence of Neuroandrogenic Etiology of Sex Roles from a Combined Analysis of Human, Nonhuman Primate and Nonprimate

Mammalian Studies," *Personality and Individual Differences* 7 (1986): 525-527. See also, Carol R. Ember, "A Cross-Cultural Perspective on Sex Differences," pp. 531-580.

39. For example, Ellis, in "Evidence of Neuroandrogenic Etiology of Sex Roles," expressed the view that the evidence in support of a biological origin of aggression is "beyond reasonable dispute."

40. Carol R. Ember, "A Cross-Cultural Perspective on Sex Differences."

41. Ronald P. Rohner, "Sex Differences in Aggression: Phylogenetic and Enculturation Perspectives," *Ethos* 4 (1976): 57-72.

42. Beatrice B. Whiting and John W.M. Whiting (in collaboration with Richard Longabaugh), *Children of Six Cultures: A Psycho-Cultural Analysis* (Cambridge, MA: Harvard University Press, 1975); see also Beatrice B. Whiting and Carolyn P. Edwards, *Children of Different Worlds: The Formation of Social Behavior* (Cambridge, MA.: Harvard University Press, 1988), p. 273.

43. Carol R. Ember, "Feminine Task Assignment and the Social Behavior of Boys," *Ethos* 1 (1973): 424-39.

44. For further discussion of this point and other possible social explanations, see Carol R. Ember, "A Cross-Cultural Perspective on Sex Differences;" and also Segall, Ember and Ember, "Aggression, Crime, and Warfare."

45. Beatrice B. Whiting and John W. M. Whiting, *Children of Six Cultures: A Psycho-Cultural Analysis* (Cambridge, MA: Harvard University Press, 1975); Whiting and Edwards, *Children of Different Worlds;* and, Munroe et al., "Aggression Among Children in Four Cultures."

46. Marcia C. Linn and Anne C. Petersen, "A Meta-Analysis of Gender Differences in Spatial Ability: Implications for Mathematics and Science Acheivement." In Janet Shibley Hyde and Marcia C. Linn, eds., *The Psychology of Gender: Advances through Meta-Analysis* (Baltimore: The Johns Hopkins University Press, 1986), pp. 67-101.

47. H. A. Witkin and John W. Berry, "Psychological Differentiation in Cross-Cultural Perspective." *Journal of Cross-Cultural Psychology* 6 (1975): 4-87.

48. Ibid. The generalization about food collectors is not consistently applicable cross-culturally. For instance, no gender differences were reported among Zambian students.

49. Judith A. Hall, *Nonverbal Sex Differences: Communication Accuracy and Expressive Style* (Baltimore: Johns Hopkins University Press, 1984).

50. For instance, Irwin Silverman and Krista Philips, "Effects of Estrogen Changes During the Menstrual Cycle on Spatial Performance," *Ethnology and Sociobiology* 14 (1993): 257-269.

51. Ruth H. Munroe, Robert L. Munroe, and Anne Brasher, "Precursors of Spatial Ability: A Longitudinal Study Among the Logoli of Kenya." *Journal of Social Psychology* 125 (1985): 23-33.

52. The research supporting this statement is discussed in Berry, *Human Ecology and Cognitive Style* and Ember, "A Cross-Cultural Perspective on Sex Differences," pp. 565-66.

53. Herbert Barry III, Irvin L. Child, and Margaret K. Bacon, "Relation of Child Training to Subsistence Economy," *American Anthropologist* 61 (1959): 51-63.

54. For example, Carol Gilligan, *In A Different Voice: Psychological Theory and Women's Development* (Cambridge, MA: Harvard University Press, 1982).

55. For example, David Stimpson, Larry Jensen, and Wayne Neff, "Cross-Cultural Gender Differences in Preference for a Caring Morality," *Journal of Social Psychology* 132 (1992): 317-322.

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57. Robert L. Munroe et al., "Sex Differences in East African Dreams," *Journal of Social Psychology* 125 (1985): 405-406.

58. Cynthia Whissell, "Personality and Emotion." In Carol R. Ember and Melvin Ember, eds. *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures,* (New York: Kluwer/Plenum, forthcoming).

59. Madeleine J. Goodman, P. Bion Griffin, Agnes A. Estioko-Griffin, and John S. Grove, "The Compatability of Hunting and Mothering among the Agta Hunter-Gatherers of the Philippines," *Sex Roles* 12 (1985): 1199-209.

60. Adams, "Why There Are So Few Women Warriors."

61. J. Z. Rubin, F. J. Provenzano, and R. F. Haskett, "The Eye of the Beholder: Parents' Views on the Sex of New Borns," *American Journal of Orthopsychiatry* 44 (1974): 512-19.

62. Whiting and Edwards, "A Cross-Cultural Analysis of Sex Differences," pp. 175-79; see also Maccoby and Jacklin, *The Psychology of Sex Differences.*

# *SUGGESTED READINGS*

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