

CHAPTER 4



... to an extraordinary degree, the predilections of the investing sex—females—potentially determine the direction in which the species will evolve. For it is the female who is the ultimate arbiter of whom she mates and how often and with whom.

—Sarah Blaffer Hrdy, 1981

WOMEN'S LONG-TERM MATING STRATEGIES

*N*owhere do people have an equal desire for all members of the opposite sex. Everywhere some potential mates are preferred, others shunned. Imagine living as our ancestors did long ago—struggling to keep warm by the fire; hunting meat for our kin; gathering nuts, berries, and herbs; and avoiding dangerous animals and hostile humans. If we were to select a mate who failed to deliver the resources promised, who had affairs, who was lazy, who lacked hunting skills, or who heaped physical abuse on us, our survival would be tenuous, our reproduction at risk. In contrast, a mate who provided abundant resources, who protected us and our children, and who devoted time, energy, and effort to our family would be a great asset. As a result of the powerful survival and reproductive advantages that were reaped by those of our ancestors who chose mates wisely, many specific desires evolved. As descendants of those winners in the evolutionary lottery, modern humans have inherited a specific set of mate preferences.

Scientists have also documented evolved mate preferences in many nonhuman species. The African village weaverbird provides a vivid illustration (Collias & Collias, 1970). When a female weaverbird arrives in the vicinity of a male, he displays his recently built nest by suspending himself upside down from the bottom and vigorously flapping his wings. If the male impresses the female, she approaches the nest, enters it, and examines the nest materials, poking and pulling them for as long as ten minutes. During this inspection the male sings to her from nearby. At any point in this sequence she may decide that the nest does not meet her standards and depart to inspect another male's nest. A male whose nest is rejected by several females will often break it

down and rebuild another from scratch. By exerting a preference for males capable of building superior nests, the female weaverbird addresses the problems of protecting and provisioning her chicks. Her preferences have evolved because they bestowed a reproductive advantage over other weaverbirds who had no preferences and who mated with any male who happened to come along.

Women, like weaverbirds, also prefer males with “nests” of various kinds. Consider one of the problems that women in evolutionary history had to face: selecting a man who would be willing to commit to a long-term relationship. A woman in our evolutionary past who chose to mate with a man who was flighty, impulsive, philandering, or unable to sustain relationships found herself raising her children alone and without benefit of the resources, aid, and protection that a more dependable mate might have offered. A woman who preferred to mate with a reliable man who was willing to commit to her presumably would have had children who survived, thrived, and multiplied. Over thousands of generations a preference for men who showed signs of being willing and able to commit evolved in women, just as preferences for mates with adequate nests evolved in weaverbirds. This preference solved key reproductive problems, just as food preferences solved key survival problems.

■ THEORETICAL BACKGROUND FOR THE EVOLUTION OF MATE PREFERENCES

This section reviews two important theoretical issues that are key to understanding the evolution of mate preferences. The first topic deals with the definition of the two distinct types that exist in sexually reproducing species—males and females—and the related issue of the influence of parental investment on the nature of mating. The second topic pertains to mate preferences as evolved psychological mechanisms.

Parental Investment and Sexual Selection

It is a remarkable fact that what defines biological sex is simply the size of the sex cells. Mature reproductive cells are called *gametes*. Each gamete has the potential to fuse with another gamete of the opposite sex to form a *zygote*, which is defined as a fertilized gamete. Males are defined as the sex with the small gametes, females as those with the large gametes. The female gametes remain reasonably stationary and come loaded with nutrients; the male gametes are endowed with greater mobility. Along with differences in size and mobility comes a difference in quantity. Men produce millions of sperm, which are replenished at a rate of roughly twelve million per hour. Women, on the other hand, produce a fixed and unrenovable lifetime supply of approximately four hundred ova.

Women’s greater initial investment per gamete does not end with the egg. Fertilization and gestation, key components of human parental investment, occur internally in women. One act of sexual intercourse, which requires minimal male investment, can produce an obligatory and energy-consuming nine-month investment by the woman that forecloses other mating opportunities. In addition, women alone engage in the activity of lactation (breastfeeding), which lasts as long as four years in some societies (Shostak, 1981).

No biological law of the animal world dictates that females must invest more than males. Indeed, among some species such as the Mormon cricket, pipefish seahorse, and Panamanian

poison arrow frog males in fact invest more (Trivers, 1985). The male Mormon cricket produces a large spermatophore that is loaded with nutrients. In areas where food is scarce, large spermatophores become extremely valuable to the female but simultaneously become difficult for the male to produce because they require extensive food consumption. Females compete with each other for access to the high-investing males holding the largest spermatophores. Among these so-called “sex-role reversed” species, males are more discriminating than females about mating. In particular, the females that are chosen by the males for depositing their spermatophore contain 60 percent more eggs than females who are rejected (Trivers, 1985). Among all 4,000 species of mammals and the more than 200 species of primates, however, the females—not the males—undergo internal fertilization and gestation.

The great initial parental investment of females makes them a valuable reproductive resource (Trivers, 1972). Gestating, bearing, lactating, nurturing, protecting, and feeding a child are exceptionally valuable reproductive resources that are not allocated indiscriminately. Those who hold valuable resources do not give them away haphazardly. Because women in our evolutionary past risked investing enormously as a consequence of having sex, evolution favored women who were highly selective about their mates. Ancestral women suffered severe costs if they were indiscriminate: They experienced lower reproductive success, and fewer of their children survived to reproductive age. A man in human evolutionary history could walk away from a casual coupling having lost only a few hours or even a few minutes. His reproductive success was not seriously compromised. A woman in evolutionary history risked getting pregnant as a result and therefore could have incurred the costs of that decision for years.

Modern birth control technology has altered this. In today’s industrial nations women can have short-term sexual encounters with less fear of pregnancy. But human sexual psychology evolved over millions of years to cope with ancestral adaptive problems, before the advent of modern contraceptive technology. Humans still possess this underlying sexual psychology, even though the current environment has changed.

In summary, Trivers’s (1972) theory of parental investment and sexual selection makes two profound predictions: (1) The sex that invests more in offspring (typically, but not always, the female) will be more discriminating or selective about mating; and (2) the sex that invests less in offspring will be more competitive for sexual access to the high-investing sex. In the human case, it is clear that women have greater *obligatory* parental investment. To produce a single child, women must endure a nine-month pregnancy, whereas men can produce that same child with as little as a few minutes of investment. When it comes to long-term mating or marriage, however, it is equally clear that both men and women invest heavily in children, and so the theory of parental investment predicts that both sexes should be very choosy and discriminating.

Mate Preferences as Evolved Psychological Mechanisms

Consider the case of an ancestral woman trying to decide between two men, one of whom shows great generosity to her with his resources and the other of whom is stingy. All else being equal, the generous man is more valuable to her than the stingy man. The generous man may share his meat from the hunt, aiding her survival. He may sacrifice his time, energy, and resources for the benefit of the children, aiding the woman’s reproductive success. In these respects the generous man has higher value than the stingy man as a mate.

If, over evolutionary time, generosity in men provided these benefits repeatedly and the cues to a man's generosity were observable and reliable, selection would have favored the evolution of a preference for generosity in a mate.

Now consider a more complicated and realistic scenario in which men vary not just in their generosity but also in a bewildering variety of ways that are significant in the choice of a mate. Men differ in their physical prowess, athletic skill, ambition, industriousness, kindness, empathy, emotional stability, intelligence, social skills, sense of humor, kin network, and position in the status hierarchy. Men also differ in the costs they carry into a mating relationship: Some come with children, bad debts, a bad temper, a selfish disposition, and promiscuous proclivities. In addition, men differ in hundreds of ways that may be irrelevant to women. From among the thousands of ways in which men differ, selection over hundreds of thousands of years focused women's preferences, laser-like, on the most adaptively valuable characteristics. Women lacking specific adaptively relevant preferences are not our ancestors; they were out-reproduced by choosier women.

The qualities people prefer, however, are not static. Because they change over time, mate seekers must gauge the future potential of a prospective partner. A man might lack resources now but, as a medical student, might have excellent future promise. Gauging a man's mating value requires looking beyond his current position and evaluating his future potential.

In short, evolution has favored women who prefer men possessing those attributes that confer benefits and who dislike men possessing those attributes that impose costs. Each separate attribute constitutes one component of a man's value to a woman as a mate. Each of her preferences tracks one critical component.

Preferences that give priority to particular components, however, do not completely solve the problem of choosing a mate. In selecting a mate, a woman must deal with the problem of identifying and correctly evaluating the cues that signal whether a man indeed possesses a particular resource. The assessment problem becomes especially acute in areas in which men are apt to deceive women, such as pretending greater status than they actually possess or feigning greater commitment than they are truly willing to give.

Finally, women face the problem of integrating their knowledge about a prospective mate. Suppose that one man is generous but emotionally unstable. Another man is emotionally stable but stingy. Which man should a woman choose? Selecting a mate requires psychological mechanisms that make it possible to add up the relevant attributes and give each its appropriate weight in the whole. Some attributes weigh more heavily than others in arriving at the final decision about whether to choose or reject a particular man.

■ THE CONTENT OF WOMEN'S MATE PREFERENCES

With this theoretical background in mind, we turn now to the actual content of women's mate preferences (summarized in Table 4.1). As the previous discussion implies, choosing a mate is a complex task, and so we do not expect to find simple answers to what women want. Perhaps no other topic has received as much research attention in evolutionary psychology, however, and so we have some reasonably firm answers to this long-standing question.

TABLE 4.1 Adaptive Problems in Long-Term Mating and Hypothesized Solutions

Adaptive Problem	Evolved Mate Preference
Selecting a mate who is able to invest	Good financial prospects Social status Older age Ambition/industriousness Size, strength, athletic ability
Selecting a mate who is willing to invest	Dependability and stability Love and commitment cues Positive interactions with children
Selecting a mate who is able to physically protect her and children	Size (height) Strength Bravery Athletic ability
Selecting a mate who will show good parenting skills	Dependability Emotional stability Kindness Positive interactions with children
Selecting a mate who is compatible	Similar values Similar ages Similar personalities
Selecting a mate who is healthy	Physical attractiveness Symmetry Healthy Masculinity

Preference for Economic Resources

The evolution of the female preference for males offering resources may be the most ancient and pervasive basis for female choice in the animal kingdom. Consider the gray shrike, a bird living in the Negev Desert of Israel (Yosef, 1991). Just before the start of the breeding season, male shrikes begin amassing caches of edible prey such as snails and useful objects such as feathers and pieces of cloth in numbers ranging from 90 to 120. They impale these items on thorns and other pointed projections within their territories. Females scan the available males and choose to mate with those with the largest caches. When Yosef arbitrarily removed portions of some males' stock and added edible objects to the supplies of others, females still preferred to mate with the males with the larger bounties. Females avoided entirely males without resources, consigning them to bachelorhood. Wherever females show a mating preference, the male's resources are often the key criterion.

Among humans the evolution of women's preference for a permanent mate with resources would have required two preconditions. First, resources would have to be accrueable,

defensible, and controllable by men during human evolutionary history. Second, men would have to differ from each other in their holdings and their willingness to invest those holdings in a woman and her children, because if all men possessed the same resources and showed an equal willingness to allocate them, there would be no need for women to develop such a preference for them.

These conditions are easily met in humans. Territory and tools, to name just two resources, are acquired, defended, monopolized, and controlled by men worldwide. Men vary tremendously in the quantity of resources they command—from the homeless to the jetsetters. Men also differ widely in how willing they are to invest their time and resources in long-term mateships. Some men prefer to mate with many women, investing little in each. Other men channel all their resources to one woman and her children (Belsky, Steinberg, & Draper, 1991).

Over the course of human evolutionary history women could often garner far more resources for their children through a single spouse than through several temporary sex partners. Men invest in their wives and children with provisions to an extent unprecedented among primates. In all other primates, females must rely solely on their own efforts to acquire food because males rarely share those resources with their mates (Smuts, 1995). Men, in contrast, provide food, find shelter, defend territory, and protect children. They tutor children in sports, hunting, fighting, hierarchy negotiation, friendship, and social influence. They transfer status, aiding offspring in forming reciprocal alliances later in life. These benefits are unlikely to be secured by a woman from a temporary sex partner.

So the stage was set for the evolution of women's preferences for men with resources. But women needed cues to signal a man's possession of those resources. These cues might be indirect, such as personality characteristics that signal a man's upward mobility. They might be physical, such as a man's athletic ability or health. They might include reputation, such as the esteem in which a man is held by his peers. The possession of economic resources, however, provides the most obvious cue.

Preference for Good Financial Prospects

Currently held mate preferences provide a window for viewing our mating past, just as our fears of snakes and heights provide a window for viewing ancestral hazards. Evidence from dozens of studies documents that modern U.S. women indeed value economic resources in mates substantially more than men do. In a study conducted in 1939, for example, U.S. men and women rated eighteen characteristics for their relative desirability in a marriage partner, ranging from irrelevant to indispensable. Women did not view good financial prospects as absolutely indispensable, but they did rate them as important, whereas men rated them as merely desirable but not very important. Women in 1939 valued good financial prospects in a mate about twice as highly as men did, a finding that was replicated in 1956 and again in 1967 (Buss, Shackelford, Kirkpatrick, & Larson, 2001).

The sexual revolution of the late 1960s and early 1970s failed to change this sex difference. In an attempt to replicate the studies from earlier decades, in the mid-1980s 1,491 people in the United States were surveyed using the same questionnaire (Buss, 1989a). Women and men from Massachusetts, Michigan, Texas, and California rated eighteen personal characteristics for their value in a marriage partner. As in the previous decades, women still valued good financial prospects in a mate roughly twice as much as did men. In 1939, for example, women judged "good financial prospect" to be 1.80 in importance on a scale ranging from

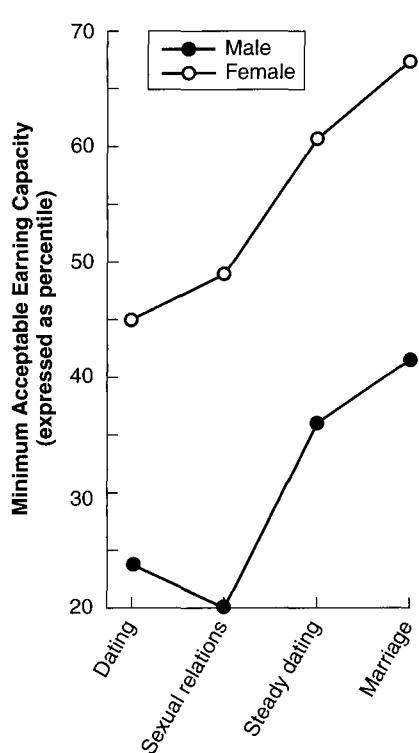


FIGURE 4.1 Minimum Acceptable Earning Capacity at Each Level of Involvement. Women maintain considerably higher minimum standards for financial capacity in mates, reaching peak standards in the long-term mating context (marriage).

Source: Kenrick, D. T., Sadalla, E. K., Groth, G., & Trost, M. R. (1990). Evolution, traits, and the stages of human courtship: Qualifying the parental investment model. *Journal of Personality*, 58, 97–116. Reprinted with permission.

0 (irrelevant) to 3 (indispensable); men in 1939 judged “good financial prospect” to be only 0.90 in importance. By 1985 women judged this quality to be 1.90 in importance, whereas men judged it to be 1.02 in importance—still roughly a twofold difference between the sexes (Buss, Shackelford, Kirkpatrick, & Larsen, 2001).

The premium that women place on economic resources has been revealed in a diversity of contexts. Douglas Kenrick and his colleagues devised a useful method for revealing how much people value different attributes in a marriage partner by having men and women indicate the “minimum percentiles” of each characteristic they would find acceptable (Kenrick et al., 1990). The percentile concept was explained with such examples as the following: “A person at the 50th percentile would be above 50% of the other people on earning capacity, and below 49% of the people on this dimension” (p. 103). U.S. college women indicate that their minimum acceptable percentile for a husband on earning capacity is the seventieth percentile, or above 70 percent of all other men, whereas men’s minimum acceptable percentile for a wife’s earning capacity is only the fortieth. Women also show higher standards for economic capacity in a dating partner, in a sexual relationship, and in a steady dating context, as shown in Figure 4.1.

Personal ads in newspapers and magazines confirm that women actually on the marriage market desire strong financial resources. A study of 1,111 personal ads found that female advertisers seek financial resources roughly eleven times as often as male advertisers do (Wiederman, 1993). In short, sex differences in preference for resources are not limited to college students and are not bound by the method of inquiry.

Nor are these female preferences restricted to America, to Western societies, or to capitalist countries. A large cross-cultural study was conducted of thirty-seven cultures on six continents and five islands using populations ranging from coast-dwelling Australians to urban Brazilians to shantytown South African Zulus (Buss, Abbott, Angleitner, Asherian, Biaggio, et al., 1990). Some participants came from nations that practice *polygyny* (the mating or marriage of a single man with several women), such as Nigeria and Zambia. Other participants came from nations that are more *monogamous* (the mating of one man with one

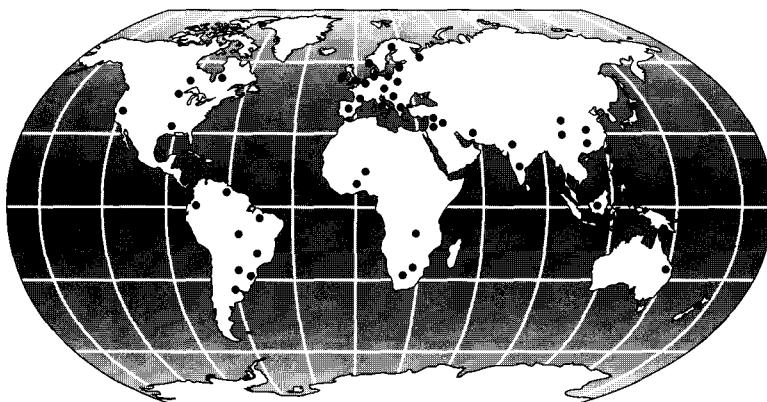


FIGURE 4.2 Locations of Thirty-Seven Cultures Studied in an International Mate Selection Project. Thirty-seven cultures, distributed as shown, were examined by the author in his international study of male and female mating preferences. The author and his colleagues surveyed the mating desires of 10,047 people on six continents and five islands. The results provide the largest database of human mating preferences ever accumulated.

Source: Buss, D. M. (1994a). The strategies of human mating. *American Scientist*, 82, 238–249. Reprinted with permission.

woman), such as Spain and Canada. The countries included those in which living together is as common as marriage, such as Sweden and Finland, as well as countries in which living together without marriage is frowned on, such as Bulgaria and Greece. The study sampled a total of 10,047 individuals in thirty-seven cultures, as shown in Figure 4.2 (Buss, 1989a).

Male and female participants in the study rated the importance of eighteen characteristics in a potential mate or marriage partner, on a scale from unimportant to indispensable. Women across all continents, all political systems (including socialism and communism), all racial groups, all religious groups, and all systems of mating (from intense polygyny to presumptive monogamy) placed more value than men on good financial prospects. Overall, women valued financial resources about 100 percent more than men, or roughly twice as much (see Figure 4.3). There are some cultural variations. Women from Nigeria, Zambia, India, Indonesia, Iran, Japan, Taiwan, Colombia, and Venezuela valued good financial prospects a bit higher than women from South Africa (Zulus), the Netherlands, and Finland. In Japan, for example, women valued good financial prospect roughly 150 percent more than men, whereas women from the Netherlands deem it only 36 percent more important than their male counterparts, less than women from any other country. Nonetheless, the sex difference remained invariant: Women worldwide desired financial resources in a marriage partner more than men.

These findings provided the first extensive cross-cultural evidence supporting the evolutionary basis for the psychology of human mating. Since that study, findings from other cultures continue to support the hypothesis that women have evolved preferences for men with resources. A study of mate selection in the country of Jordan found that women more

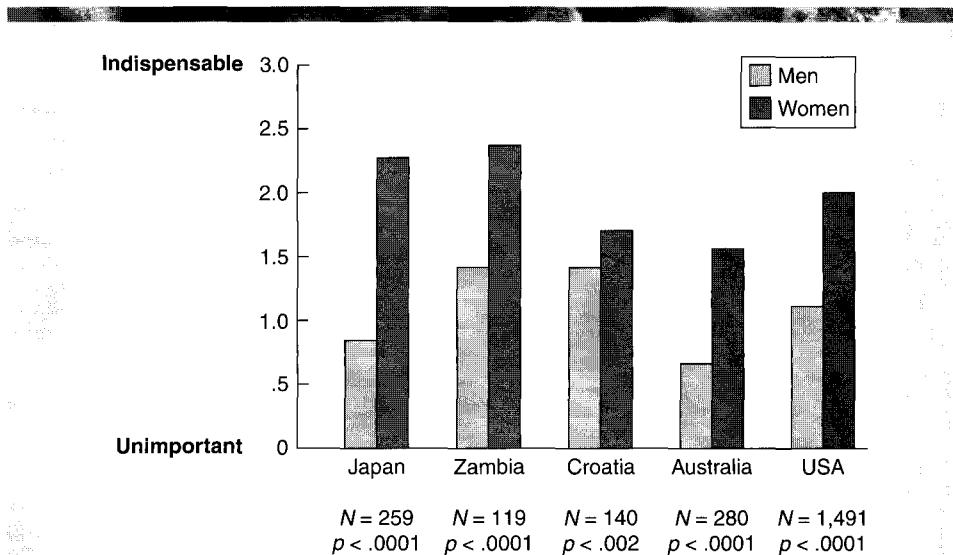


FIGURE 4.3 Preference for Good Financial Prospect in a Marriage Partner.

Participants in cultures rated this variable, in the context of seventeen other variables, on how desirable it would be in a potential long-term mate or marriage partner using a four-point rating scale, ranging from zero (irrelevant or unimportant) to three (indispensable).

N = sample size.

p values less than .05 indicate that sex difference is significant.

Source: Buss, D. M., & Schmidt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, 100, 204–232. Copyright © 1993 by the American Psychological Association. Adapted with permission.

than men valued economic ability, as well as qualities linked to economic ability such as status, ambition, and education (Khallad, 2005). Using a different method—analysis of folktales in forty-eight cultural areas including bands, tribes, preindustrial states, Pacific islands, and all the major continents—Jonathan Gottschall and colleagues found the same sex difference (Gottschall, Berkey, Cawson, Drown, Fleischner, et al., 2003). Substantially more female than male characters in the folktales from each culture placed a primary emphasis on wealth or status in their expressed mate preferences. Gottschall found similar results in a historical analysis of European literature (Gottschall, Martin, Quish, & Rea, 2004). A study of 500 Muslims living in the United States found that women sought financially secure, emotionally sensitive, and sincere partners, the latter likely being a signal of willingness to commit to a long-term relationship (Badahdah & Tiemann, 2005). Finally, an in-depth study of the Hadza of Tanzania, a hunter-gatherer society, found that women place a great importance on a man's foraging abilities—primarily his ability to hunt (Marlow, 2004).

This fundamental sex difference also appears prominently in modern forms of mating, such as speed dating and mail-order brides. In a study of speed dating, in which individuals engage in four-minute conversations to determine whether they are interested in meeting the other person again, women chose men who indicated that they had grown up in affluent

neighborhoods (Fisman et al., 2006). A study of the mate preferences of mail-order brides from Colombia, the Philippines, and Russia found that these women sought husbands who had status and ambition—two key correlates of resource acquisition (Minervini & McAndrew, 2005). As the authors conclude, “women willing to become MOBs [mail-order brides] do not appear to have a different agenda than other mate-seeking women; they simply have discovered a novel way to expand their pool of prospective husbands” (p. 17).

The enormous body of empirical evidence across different methods, time periods, and cultures supports the hypothesis that women have evolved a powerful preference for long-term mates with the ability to provide resources. Because ancestral women faced the tremendous burdens of internal fertilization, a nine-month gestation, and lactation, they would have benefited tremendously by selecting mates who possessed resources. Today's women are the descendants of a long line of women who had these mate preferences—preferences that helped their ancestors solve the adaptive problems of survival and reproduction.

Preference for High Social Status

Traditional hunter-gatherer societies, which are our closest guide to what ancestral conditions were probably like, suggest that ancestral men had clearly defined status hierarchies, with resources flowing freely to those at the top and trickling slowly down to those at the bottom (Betzig, 1986; Brown & Chia-Yun, n.d.). Cross-culturally, groups such as the Melanesians, the early Egyptians, the Sumerians, the Japanese, and the Indonesians include people described as “head men” and “big men” who wield great power and enjoy the resource privileges of prestige. Among various South Asian languages, for example, the term “big man” is found in Sanskrit, Hindi, and several Dravidian languages. In Hindi, for example, *bara asami* means “great man, person of high position or rank” (Platts, 1960, pp. 151–152). In North America, north of Mexico, “big man” and similar terms are found among groups such as the Wappo, Dakota, Miwok, Natick, Choctaw, Kiowa, and Osage. In Mexico and South America “big man” and closely related terms are found among the Cayapa, Chatino, Mazahua, Mixe, Mixteco, Quiche, Terraba, Tzeltal, Totonaco, Tarahumara, Quechua, and Hahuatl. Linguistically, therefore, it seems that many cultures have found it important to invent words or phrases to describe men who are high in status. A man's social status, as indicated by these linguistic phrases, would provide a powerful cue to his possession of resources.

Women desire men who command a high position because social status is a universal cue to the control of resources. Along with status come better food, more abundant territory, and superior health care. Greater social status bestows on children social opportunities missed by the children of lower-ranking males. For male children worldwide, access to more and better quality mates typically accompanies families of higher social status. In one study of 186 societies ranging from the Mbuti Pygmies of Africa to the Aleut Eskimos, high-status men invariably had greater wealth and more wives and provided better nourishment for their children (Betzig, 1986).

One study examined short-term and long-term mating to discover which characteristics people especially valued in potential spouses, as contrasted with potential sex partners (Buss & Schmitt, 1993). Several hundred individuals evaluated sixty-seven characteristics for their desirability or undesirability in the short or long term, rating them on a scale ranging from -3 (extremely undesirable) to $+3$ (extremely desirable). Women judged the likelihood of success in a profession and the possession of a promising career to be highly desirable in a spouse, giving average ratings of $+2.60$ and $+2.70$, respectively. Significantly, these cues to future status are

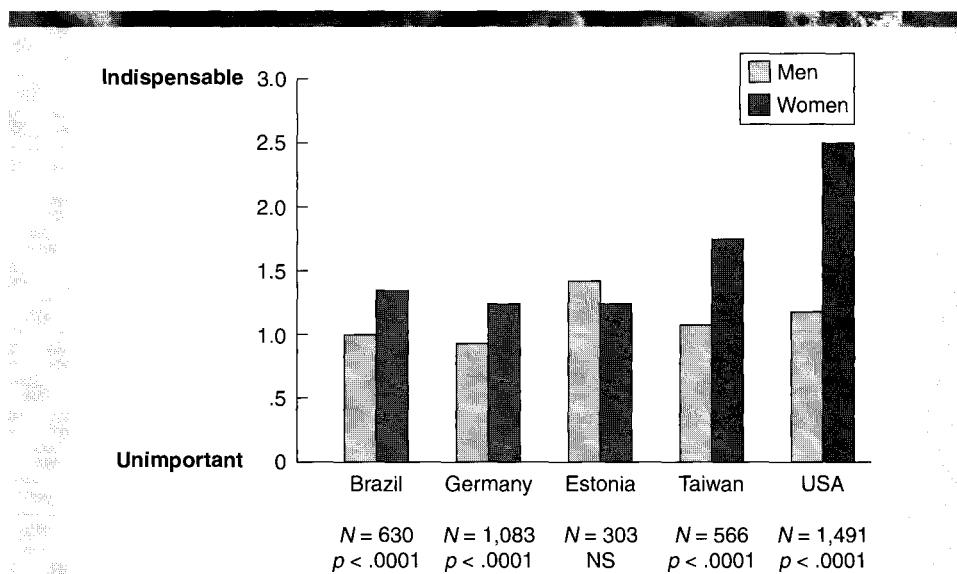


FIGURE 4.4 Preference for Social Status in a Marriage Partner. Participants in thirty-seven cultures rated this variable, in the context of eighteen other variables, on how desirable it would be in a potential long-term mate or marriage partner using a four-point rating scale, ranging from zero (irrelevant or unimportant) to three (indispensable).

N = sample size.

p values less than .05 indicate that sex difference is significant.

NS indicates that sex difference is not significant.

Source: Buss, D. M., Abbott, M., Angleitner, A., Asherian, A., Biaggio, A., et al. (1990). International preferences in selecting mates: A study of 37 cultures. *Journal of Cross-Cultural Psychology*, 21, 5–47.

seen by women as more desirable in spouses than in casual sex partners, with the latter ratings reaching only +1.10 and +0.40, respectively. U.S. women also place great value on education and professional degrees in mates—characteristics that are strongly linked with social status.

The importance that women grant to social status in mates is not limited to the United States or even to capitalist countries. In the vast majority of the thirty-seven cultures considered in the international study on choosing a mate, women valued social status in a prospective mate more than men in both communist and socialist countries, among Africans and Asians, among Catholics and Jews, in the southern tropics and the northern climes (Buss, 1989a). In Taiwan, for example, women valued status 63 percent more than men, in Zambia women valued it 30 percent more, in West Germany women valued it 38 percent more, and in Brazil women valued it 40 percent more (see Figure 4.4).

Hierarchies are universal features among human groups, and resources tend to accumulate to those who rise in the hierarchy. Women historically appear to have solved the adaptive problem of acquiring resources in part by preferring men who are high in status.

Preference for Somewhat Older Men

The age of a man also provides an important clue to his access to resources. Just as young male baboons must mature before they are able to enter the upper ranks in the baboon social hierarchy, human adolescents rarely command the respect, status, or position of more mature men. This reaches extremes among the Tiwi, an aboriginal tribe located on two islands off the coast of Northern Australia (Hart & Pilling, 1960). The Tiwi are a gerontocracy in which the very old men wield most of the power and prestige and control the mating system through their complex networks of alliances. Even in U.S. culture, status and wealth tend to accumulate with increasing age.

In all thirty-seven cultures included in the international study on mate selection, women preferred older men (see Figure 4.5). Averaged over all cultures, women prefer men who are roughly three-and-a-half years older. The preferred age difference ranges from

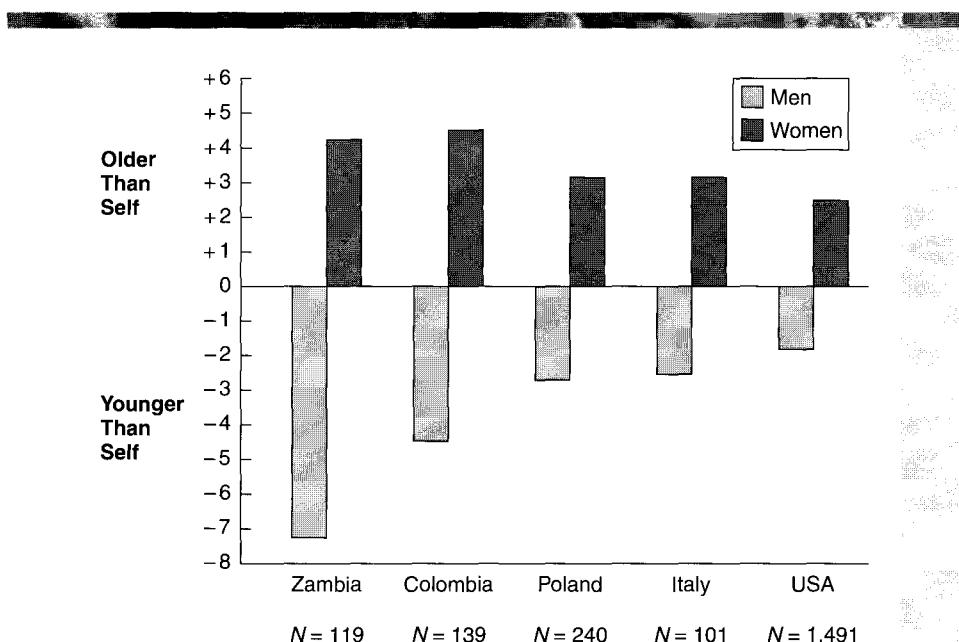


FIGURE 4.5 Age Differences Preferred between Self and Spouse. Participants recorded their preferred age difference, if any, between self and potential spouse. The scale shown is in years, with positive values signifying preference for older spouses and negative values signifying preference for younger spouses.

N = sample size.

Source: Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, 100, 204–232. Copyright © 1993 by the American Psychological Association. Adapted with permission.

French Canadian women, who seek husbands just a shade under two years older, to Iranian women, who seek husbands more than five years older.

To understand why women value older mates, we must consider the things that change with age. One of the most consistent changes is access to resources. In contemporary Western societies income generally increases with age (Jencks, 1979). These status trends are not limited to the Western world. Among the Tiwi, a polygynous people, men are typically at least thirty before they have enough social status to acquire a first wife (Hart & Pilling, 1960). Rarely does a Tiwi man under the age of forty attain enough status to acquire more than one wife. Older age, resources, and status are coupled across cultures.

In traditional societies part of this linkage may be related to physical strength and hunting prowess. Physical strength increases in men as they get older, peaking in the late twenties and early thirties. Although there have been no systematic studies of the relationship between age and hunting ability, anthropologists believe it may peak when a man is in his mid-thirties, at which point his slight decline in physical prowess is more than compensated for by his increased knowledge, patience, skill, and wisdom (Kim Hill, personal communication, 1991). So women's preference for older men may stem from our hunter-gatherer ancestors, for whom the resources derived from hunting were critical to survival.

Twenty-year-old women in all thirty-seven cultures studied typically prefer to marry men only a few years older, not substantially older, in spite of the fact that men's financial resources generally do not peak until they are in their forties or fifties. One reason why young women are not drawn to substantially older men may be that older men have a higher risk of dying and hence are less likely to be around to continue contributing to the provisioning and protection of children. Furthermore, the potential incompatibility created by a large age discrepancy may lead to strife, thus increasing the odds of divorce. For these reasons, young women may be more drawn to men a few years older who have considerable promise, rather than to substantially older men who already have attained a high position but have a less certain future.

All these cues—economic resources, social status, and older age—add up to one thing: the ability of a man to acquire and control resources that ancestral women could use for themselves and for their children. The possession of resources, however, is not enough. Women also need men who possess traits that are likely to lead to the sustained acquisition of resources over time. A man's ambition is one of these traits.

Preference for Ambition and Industriousness

How do people get ahead in everyday life? Among all the tactics, sheer hard work proves to be one of the best predictors of past and anticipated income and promotions. Those who say they work hard and whose spouses agree that they work hard achieve higher levels of education, higher annual salaries, and anticipate greater salaries and promotions than those who failed to work hard. Industrious and ambitious men secure a higher occupational status than lazy, unmotivated men (Jencks, 1979; Kyl-Heku & Buss, 1996; Willerman, 1979).

U.S. women seem to be aware of this connection, because they indicate a desire for men who show the characteristics linked with getting ahead. In the 1950s, for example,

5,000 undergraduates were asked to list characteristics that they sought in a potential mate. Women far more than men desired mates who enjoy their work, show career orientation, demonstrate industry, and display ambition (Langhorne & Secord, 1955). The 852 single U.S. women and 100 married U.S. women in the international study on mate selection unanimously rated ambition and industriousness as important or indispensable (Buss, 1989a). Women in the study of short- and long-term mating regard men who lack ambition as extremely undesirable, whereas men view lack of ambition in a wife as neither desirable nor undesirable (Buss & Schmitt, 1993). Women are likely to discontinue a long-term relationship with a man if he loses his job, lacks career goals, or shows a lazy streak (Betzig, 1989).

Women's preference for men who show ambition and industry is not limited to the United States or even to Western society. In the overwhelming majority of cultures women value ambition and industry more than men do, typically rating them as between important and indispensable. In Taiwan, for example, women rate ambition and industriousness as 26 percent more important than men do, women from Bulgaria rate it as 29 percent more important, and women from Brazil rate it as 30 percent more important. This cross-cultural and cross-history evidence supports the key evolutionary expectation that women have evolved a preference for men possessing signs of the *ability* to acquire resources and a disdain for men lacking the ambition that often leads to resources.

Preference for Dependability and Stability

Among the eighteen characteristics rated in the worldwide study on mate selection, the second and third most highly valued characteristics, after love, are a dependable character and emotional stability or maturity. In twenty-one of thirty-seven cultures, men and women had the same preference for dependability in a partner (Buss et al., 1990). Of the remaining sixteen cultures, women in fifteen valued dependability more than men. Averaged across all thirty-seven cultures, women rated dependable character a 2.69, where a 3 signifies indispensable; men rate it nearly as important, with an average of 2.50. In the case of emotional stability or maturity the sexes differ more. Women in twenty-three cultures value this quality significantly more than men do; in the remaining fourteen cultures men and women value emotional stability equally. Averaging across all cultures, women give this quality a 2.68, whereas men give it a 2.47. In all cultures, in effect, women place a tremendous value on these characteristics, judging them to be anywhere from important to indispensable in a potential spouse.

These characteristics may possess great value to women worldwide for two reasons. First, they are reliable signals that resources will be provided consistently over time. Second, men who lack dependability and emotional stability provide erratically and inflict heavy emotional and other costs on their mates (Buss, 1991). They tend to be self-centered and monopolize shared resources. Furthermore, they are frequently possessive, monopolizing much of the time of their wives. They show higher than average sexual jealousy, becoming enraged when their wives merely talk with someone else, and are dependent, insisting that their mates provide for all of their needs. They tend to be abusive both verbally and physically. They display inconsiderateness, such as by failing to show up on time, and they are moodier than their more stable counterparts, often crying for no

apparent reason. They have more affairs than average, suggesting further diversion of time and resources (Buss & Shackelford, 1997a). All these costs indicate that such men will absorb their partners' time and resources, divert their own time and resources elsewhere, and fail to channel resources consistently over time. Dependability and stability are personal qualities that signal increased likelihood that a woman's resources will not be drained by the man.

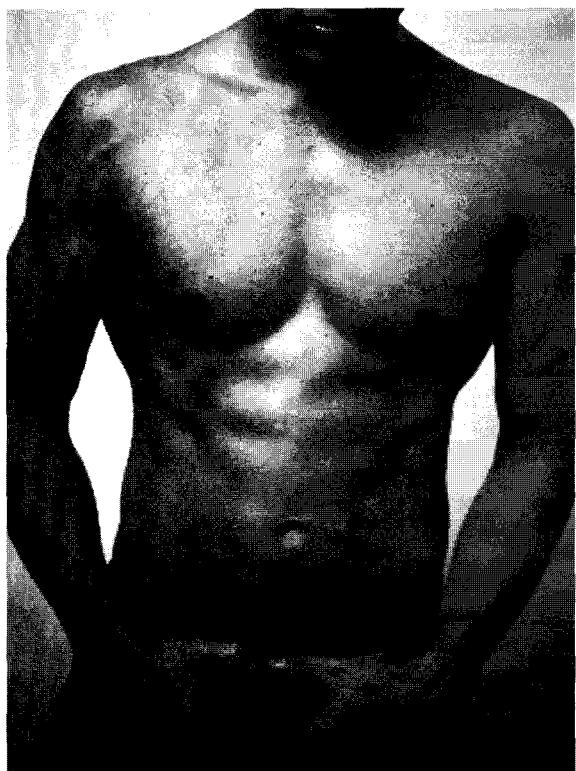
The unpredictable aspects of emotionally unstable men inflict additional costs by preventing solutions to critical adaptive problems. The erratic supply of resources can wreak havoc with accomplishing the goals required for survival and reproduction. Meat that is suddenly not available because an unpredictable, changeable, or variable mate decided at the last minute to take a nap rather than go on the hunt is sustenance counted on but not delivered. Resources that are supplied predictably can be more efficiently allocated to the many adaptive hurdles that must be overcome in everyday life. Women place a premium on dependability and emotional stability to reap the benefits that a mate can provide to them consistently over time.

Preference for Athletic Prowess

The importance of physical characteristics in the female choice of a mate is notable throughout the animal world. Male gladiator frogs are responsible for creating nests and defending the eggs. In the majority of courtships, a stationary male gladiator frog is deliberately bumped by a female who is considering him. She strikes him with great force, sometimes enough to rock him back or even scare him away. If the male moves too much or bolts from the nest, the female hastily leaves to find an alternative mate. Only rarely does a female reject a male who remains firmly planted after being bumped. Bumping helps a female frog assess how successful the male will be at defending her clutch. The bump test reveals the male's physical ability to protect.

Women sometimes face physical domination by larger, stronger males, which can lead to injury and sexual domination. These conditions undoubtedly occurred with some regularity during ancestral conditions. Indeed, studies of many nonhuman primate groups reveal that male physical and sexual domination of females has been a recurrent part of our primate heritage. Primatologist Barbara Smuts lived among the baboons residing in the savanna plains of Africa and studied their mating patterns (Smuts, 1985). She found that females frequently formed enduring "special friendships" with males who offered physical protection to themselves and their infants. In return, these females granted their "friends" preferential sexual access during times of estrus. In essence, female baboons exchange sex for protection.

One benefit to women of long-term mating is the physical protection a man can offer. A man's size, strength, physical prowess, and athletic ability are cues that signal solutions to the problem of protection. The evidence shows that women's preferences in a mate embody these cues. In the study of temporary and permanent mating, U.S. women rated the desirability of a series of physical traits. Women judged short men to be undesirable for either a short-term or a permanent mate (Buss & Schmitt, 1993). In contrast, women found it very desirable for a potential marriage partner to be tall, physically strong, and athletic. A study of women from Britain and Sri Lanka found strong preferences for male physiques that were muscular and lean (Dixon, Halliwell, East, Wignarajah, & Anderson, 2003).



Women prefer men who are relatively tall, athletic, muscular, and display a V-shaped torso, with shoulders broader than hips—signals that indicate a man's ability to protect a woman and her children.

A heavily muscled, imposingly built man is likely to accumulate many girlfriends, while a small man, deprecatingly referred to as a *peritsi*, fares badly. The mere fact of height creates a measurable advantage. . . . A powerful wrestler, say the villagers, is frightening . . . he commands fear and respect. To the women, he is "beautiful" (*awitsiri*), in demand as a paramour [lover] and husband. Triumphant in politics as well as in love, the champion wrestler embodies the highest qualities of manliness. Not so fortunate the vanquished. A chronic loser, no matter what his other virtues, is regarded as a fool. As he wrestles, the men shout mock advice. . . . The women are less audible as they watch the matches from their doorways, but they too have their sarcastic jokes. None of them is proud of having a loser as a husband or lover. (pp. 35, 96)

Barbara Smuts believes that during human evolutionary history physical protection was one of the most important things a man could offer a woman. Aggressive men wishing to dominate women physically and to circumvent women's sexual choices may have exerted an important selection pressure on women in ancestral times. Evolutionary psychologist Nigal Barber summarizes the evidence for women's preferences: "traits of male body structure such as height, shoulder width, and upper-body musculature are sexually attractive to women and also intimidating to other men" (Barber, 1995, p. 406).

Women also prefer and find attractive men who show the "V-shaped" torso, that is broad shoulders relative to hips (Hughes & Gallup, 2003).

U.S. women consistently indicated a preference for men of average or taller height, roughly 5 feet 11 inches, as the ideal marriage partner. Tall men are consistently seen as more desirable as dates and mates than are short or average men (Ellis, 1992). Furthermore, the two studies of personal ads described earlier revealed that, among women who mentioned height, 80 percent wanted a man to be 6 feet or taller (Cameron, Oskamp, & Sparks, 1978). Perhaps even more telling is the finding that ads placed by taller men received more responses from women than those placed by shorter men (Lynn & Shurgot, 1984). Women solve the problem of protection from other aggressive men at least in part by preferring a mate who has the size, strength, and physical prowess to protect them.

This preference is not limited to Western cultures. Among the Mehinaku tribe of the Brazilian Amazon anthropologist Thomas Gregor (1985) noted the importance of men's wrestling skills as an arena in which these differences become acute:

Preference for Good Health and Physical Appearance

Mating with someone who is unhealthy would have posed a number of adaptive risks for our ancestors. First, an unhealthy mate would have a higher risk of becoming debilitated, thus failing to deliver whatever adaptive benefits he or she might otherwise have provided such as food, protection, health care, and investment in childrearing. Second, an unhealthy mate would be at an increased risk of dying, prematurely cutting off the flow of resources and forcing a person to incur the costs of searching for a new mate. Third, an unhealthy mate might transfer communicable diseases or viruses to the chooser, impairing his or her survival and reproduction. Fourth, an unhealthy mate might infect the children of the union, imperiling their chances of surviving and reproducing. And fifth, if health is partly heritable, a person who chooses an unhealthy mate would risk passing on genes for poor health to his or her children. For all these reasons, it comes as no surprise that women and men both place a premium on the health of a potential mate. In the study of thirty-seven cultures, on a scale ranging from 0 (irrelevant) to +3 (indispensable), women and men both judged “good health” to be highly important. Averaged across the cultures, women gave it a +2.28 and men gave it a +2.31 (Buss et al., 1990).

The importance people place on good health is not unique in the animal world. Some species display large, loud, and gaudy traits that are costly yet appear to signal health and vitality. Consider the bright, flamboyant, ostentatious plumage of the peacock. The mystery of the peacock’s tail, which seems so contrary to survival, is on the verge of being solved. It has been proposed that the brilliant plumage of peacocks and other birds serves as a signal of a low load of parasites (Hamilton & Zuk, 1982). Peacocks with duller plumage, it turns out, carry a higher parasite load. Peahens appear to prefer the brilliant plumage because it provides a reliable signal of a healthy peacock.

Randy Thornhill, Steve Gangestad, Karl Grammer, Todd Shackelford, Randy Larsen, and others have discovered an important physical marker of good health: the degree to which the face and body are *symmetrical* (Gangestad & Thornhill, 1997; Grammer & Thornhill, 1994; Shackelford & Larsen, 1997; Thornhill & Moeller, 1997). Their evolutionary reasoning is that various environmental events and genetic stressors produced deviations from bilateral symmetry, creating lopsided faces and bodies. Some individuals are able to withstand such events and stresses better than others—that is, they show *developmental stability*. The presence of facial and bodily symmetry is an important health cue, reflecting an individual’s ability to withstand environmental and genetic stressors. Therefore, women are hypothesized to have evolved a preference for men who show physical evidence of symmetry. Such symmetry would not only increase the odds of the mate being around to invest and less likely to pass on diseases to her children, it may have direct genetic benefits as well. By selecting a man with symmetrical features, a woman may be in essence selecting a superior complement of genes to be transmitted to her children.

Some evidence supports the hypothesis that symmetry is indeed a health cue and that women especially value this quality in mates (Gangestad & Thornhill, 1997; Thornhill & Moeller, 1997). First, facially symmetric individuals score higher on tests of physiological, psychological, and emotional health (Shackelford & Larsen, 1997). Second, there is a small but positive relationship between facial symmetry and judgments of physical attractiveness in both sexes. Third, facially symmetrical men, compared with their more lopsided counterparts, are judged to be more sexually attractive to women, have more sexual partners during



Most women find men with symmetrical faces, as exemplified by the actor Denzel Washington (left), to be more attractive than men with asymmetrical faces, as illustrated by the musician and actor Lyle Lovett (right). Symmetry is hypothesized to be a health cue that signals a relative absence of parasites, genetic resistance to parasites, or a relative lack of environmental insults during development.

their lifetimes, have more extra-pair copulations, and begin sexual intercourse earlier in life. Some studies by independent researchers find support for the link between facial symmetry and judgments of health (Jones, Little, Penton-Voak, Tiddeman, Burt, & Perrett, 2001). Men with more symmetrical faces experienced fewer respiratory illnesses, suggesting better disease resistance (Thornhill & Gangestad, 2006). Some researchers, however, question the quality of the studies and conclude that the evidence on the association between symmetry and health is not yet convincing (Rhodes, 2006).

Another health cue might stem from masculine features. The average faces of adult men and women differ in several fundamental respects. Men tend to have longer and broader lower jaws, stronger brow ridges, and more pronounced cheekbones, primarily as a consequence of pubertal hormones such as testosterone. Victor Johnston and his colleagues developed a sophisticated experimental tool to vary these features, in the form of a 1,200-frame QuickTime movie (Johnston, Hagel, Franklin, Fink, & Grammer, 2001). The computer program allows a person to search through a multidimensional space containing hundreds of faces that vary in masculinity, femininity, and other features. Participants use a slider control and single-frame buttons to move back and forth through the 1,200-frame movie to locate the frame containing the desired target, such as "most attractive for a long-term mate." The researchers tested forty-two women between the ages of eighteen and thirty-five who were not taking oral contraceptives and obtained an evaluation of the point in their menstrual cycle.

Johnston and his colleagues made an important discovery: Women overall, regardless of their point in the menstrual cycle, preferred faces that were more masculine-looking than average. Although not all studies find a female preference for facial masculinity (e.g., Waynforth, Delwadia, & Camm, 2005), a meta-analysis of 10 studies confirmed that masculinity is attractive in male faces, although the effect size is modest (+.35) (Rhodes, 2006). Why would women find masculine-looking males attractive? Johnston argues that masculine features are signals of good health. The production of high levels of testosterone is known to compromise the human immune system. According to Johnston's argument, only males who are quite healthy can "afford" to produce high levels of testosterone during their development. Less healthy males must suppress testosterone production, lest they compromise their already weaker immune systems. As a result, healthy males end up producing more testosterone and developing more rugged masculine-looking faces. If Johnston's argument is correct, women's preference for masculine faces is essentially a preference for a healthy male.

One piece of evidence in support of this view came when Johnston went through the 1,200-frame QuickTime movie a second time and asked the women to pick out the face they viewed as the "healthiest." The faces women chose were indistinguishable from their judgments of "the most attractive face," supporting the theory that masculine appearance might be valued by women because it signals health (but see Boothroyd, Jones, Burt, Cornwell, Little, Tiddeman, & Perrett, 2005, for a study that failed to support the link between facial masculinity and perceived health). Another study found that men with more masculine faces had fewer respiratory diseases, suggesting that it might be a signal of disease resistance (Thornhill & Gangestad, 2006).

In summary, several sources of evidence point to the importance of health in women's mate selection: an expressed desire for health in long-term mates found in all thirty-seven cultures; an attraction to symmetry, a known health cue, in male faces and bodies; and an attraction to masculine male faces that are simultaneously judged to be healthy. Health likely achieves its importance through the multiple benefits it confers on a mate selector, both environmental and genetic: longer life, more reliable provisioning, a lower likelihood of communicable diseases, and better genes that can be passed on to children.

Love and Commitment

Women long have faced the adaptive problem of choosing men who not only have the necessary resources but also show a *willingness to commit* those resources to them and their children. This may be more problematic than it at first seems. Although resources can often be directly observed, commitment cannot. Instead, gauging commitment requires looking for cues that signal the likelihood of future fidelity in the channeling of resources. Love may be one of the key cues to commitment.

According to conventional wisdom in the social sciences, "love" is a relatively recent invention, introduced a few hundred years ago by romantic Europeans (Jankowiak, 1995). Research suggests that this conventional wisdom is radically wrong. There is evidence that loving thoughts, emotions, and actions are experienced by people in cultures worldwide—from the Zulu in the southern tip of Africa to the Eskimos in the cold northern ice caps of Alaska. In a survey of 168 diverse cultures around the world, anthropologists William Jankowiak and Edward Fischer examined four sources of evidence for the presence of love: the singing of love songs, elopement by lovers against the wishes of parents, cultural informants reporting

personal anguish and longing for a loved one, and folklore depicting romantic entanglements. Using the presence of these phenomena, they found evidence for the presence of romantic love in 88.5 percent of the cultures (Jankowiak, 1995; Jankowiak & Fischer, 1992). Clearly love is not a phenomenon limited to the United States or to Western culture.

To identify precisely what love is and how it is linked to commitment, one study examined acts of love (Buss, 1988a, 2006a). Acts of commitment top women's and men's lists, being viewed as most central to love. Such acts include giving up romantic relations with others, talking of marriage, and expressing a desire to have children with this person. When performed by a man, these acts of love signal the intention to commit resources to one woman and her future children. The hypothesis that the commitment of paternal care to children is one of the functions of love attains support from a comparative and phylogenetic analysis of different species (see Chapter 2) that looked at the links between adult attachment and paternal care (Fraley, Brumbaugh, & Marks, 2005). Species that exhibited adult attachment were more likely than species that did not to be characterized by male parental investment in offspring. Thus, one function of the female preference for love in a mate is to ensure the commitment of his parental resources to the children they produce together.

Commitment, however, has many facets that signal particular ways of sharing resources. One major component of commitment is fidelity, exemplified by the act of remaining faithful to a partner when not physically together. Fidelity signals the exclusive commitment of sexual resources to a single partner. Another aspect of commitment is the channeling of resources to the loved one, such as buying an expensive gift. Acts such as this signal a serious intention to commit to a long-term relationship. Emotional support is yet another facet of commitment, revealed by such behavior as being available in times of trouble and listening to the partner's problems. Commitment entails a channeling of time, energy, and effort to the partner's needs at the expense of fulfilling one's own personal goals. Acts of reproduction also represent a direct commitment to one's partner's reproduction. All these acts, which are viewed as essential to love, signal the commitment of sexual, economic, emotional, and genetic resources to one person.

Because love is a worldwide phenomenon, and because a primary function of acts of love is to signal commitment, women are predicted to place a premium on love in the process of choosing a long-term mate. The international study on choosing a mate confirmed the importance of love across cultures. Among eighteen possible characteristics, mutual attraction or love proved to be the most highly valued in a potential mate by both sexes, rated a 2.87 by women and a 2.81 by men (Buss et al., 1990). Nearly all women and men, from the tribal enclaves of South Africa to the bustling streets of Brazilian cities, gave love the top rating, indicating that it is an indispensable part of marriage.

Researchers have made progress in identifying the underlying brain mechanisms involved in love (Bartels & Zeki, 2004; Fisher, Aron, & Brown, 2005). Using functional magnetic resonance imaging technology (fMRI), researchers scanned the brains of individuals who were intensely in love while they thought about their loved one. The specific areas of the brain that "lit up" (showed an increased blood flow, indicating changes in neural activity) centered on the caudate nucleus and the ventral tegmental area. These areas contain cells that produce dopamine, which stimulate the reward centers of the brain, analogous to experiencing a "rush" of cocaine (Fisher, 2006). Thus, researchers are beginning to make progress in identifying the underlying brain circuits involved in the adaptation of love.

Preference for Willingness to Invest in Children

Another adaptive problem that women face when selecting a long-term mate is gauging men's willingness to invest in children. This adaptive problem is important for two reasons: (1) Men sometimes seek sexual variety and so may channel their efforts toward other women (mating effort) rather than toward children (parental effort) (see Chapter 6); and (2) men evaluate the likelihood that they are the actual genetic father of a child and tend to withhold investment from the child when they know or suspect that the child is not their own (La Cerra, 1994). These two factors imply that men will differ widely in how willing they are to invest in a particular child; this variability is essential for the evolution of women's preferences for men who show signs of a willingness to invest in their children.

To test the hypothesis that women have an evolved preference for men who are willing to invest in children, psychologist Peggy La Cerra constructed slide images of men in several different conditions: (1) a man standing alone; (2) a man interacting with an eighteen-month-old child, including smiling, making eye contact, and reaching for the child; (3) a man ignoring the child, who was crying; (4) a man and the child simply facing forward (neutral condition); and (5) a man vacuuming a living room rug. The same models were depicted in all conditions.

After viewing these slide images, 240 women rated each image on how attractive they found the man in each slide as a date, as a sexual partner, as a marriage partner, as a friend, and as a neighbor. The rating scale ranged from -5 (very unattractive) to $+5$ (very attractive).



La Cerra (1994) found that women find the man interacting positively with the baby considerably more attractive, suggesting a mate preference for men who display a willingness to invest in children. Comparable photographs of women, shown either ignoring or interacting positively with a baby, produced no effect on men's judgments of women's attractiveness.

First, women found the man interacting with the child positively to be more attractive as a marriage partner (average attractiveness rating, 2.75) than the same man either standing alone (2.0) or standing neutrally next to the child (2.0). Second, women found the man who ignored the child in distress to be low in attractiveness as a marriage partner (1.25), indeed the lowest of all. Third, the effect of interacting positively with the child proved *not* to be a result of the man showing domestic proclivities in general. Women found the man vacuuming, for example, to be less attractive (1.3) than the man simply standing alone doing nothing (2.0). From this study La Cerra concluded that “women’s ratings of the attractiveness of men as potential mates are increased by cues of their affection toward a child and decreased by cues of their indifference toward a child in distress” (La Cerra, 1994, p. 67).

This study suggests that women prefer men who show a willingness to invest in children as marriage partners. Is this preference unique to women? To address this issue, La Cerra conducted another study, this time using women as models and men as raters. Women were posed in conditions parallel to those of the male models in the first study. The results for men were strikingly different from those for women. Men found the woman standing alone to be just as attractive (average attractiveness rating, 2.70) as the woman interacting positively with the child (2.70). In fact, the varying contexts made little difference to men in their judgments of how attractive the woman was as a marriage partner.

In short, women appear to have a specific preference for, and attraction to, men who show a willingness to invest in children, but the reverse is not true. These findings have been replicated by Gary Brase who made several methodological improvements (Brase, 2006). On a personal note, La Cerra observed that one catalyst for her research was witnessing a poster of an attractive man holding an infant—an image that drew her attention and also proved to be a highly effective advertising technique for targeting female markets (La Cerra, 1994, p. 87).

An interesting recent study explored the importance of men’s interest in infants on women’s attraction to a man as a long-term mate (Roney, Hanson, Durante, & Maestripieri, 2006). The experimenters gave a sample of men the “interest in infants test,” which assesses the degree to which men prefer to look at infant faces—a measure that predicts men’s actual levels of interaction with infants. Next, these men’s faces were photographed. Then, a sample of 29 women rated each photo on a set of variables that included “likes children.” A second rating sheet had the women rate each man’s attractiveness as a short-term and long-term romantic partner. The results proved fascinating. First, women were able to accurately detect men’s interest in infants simply from looking at the photos of their faces. It is likely that women were picking up on the positivity and happiness in the facial expressions of men who had an interest in children. Second, men who women perceived as liking infants were judged to be very attractive as long-term mates; men’s perceived liking of infants, in contrast, did not boost their attractiveness in women’s eyes as a short-term mate.

Taken together, these studies point to the importance of paternal qualities—a man’s interest in, and willingness to invest in, children—as critical to women’s selection of a long-term mate.

Preference for Similarity

Successful long-term mating requires sustained cooperative alliances over time. Similarity leads to emotional bonding, cooperation, communication, mating happiness, lower risk of breaking up, and possibly increased survival of children (Buss, 2003). Women and men alike

show strong preferences for mates who share their values, political orientations, worldviews, intellectual level, and to a lesser extent their personality characteristics. The preference for similarity translates into actual mating decisions, a phenomenon known as *homogamy*—people who are similar on these characteristics date (Wilson, Cousins, & Fink, 2006) and get married (Buss, 1985) more often than those who are dissimilar. Homogamy for physical appearance might be due to “sexual imprinting” on the opposite-sex parent during childhood (Bereczkei, Gyuris, & Weisfeld, 2004). Interestingly, daughters who received more emotional support from their fathers were more likely to choose similar-looking mates. Finally, there is strong homogamy for overall “mate value,” with the “10s” mating with other “10s” and the “6s” mating with other “6s” (Buss, 2003).

Additional Mate Preferences: Humor, Incest Avoidance, and Voice

Women’s desires are even more complex than the previous discussion indicates, and new discoveries are being made every year. A few of the more noteworthy ones will be mentioned here.

Women clearly prefer long-term mates who have a good sense of humor (Buss & Barnes, 1986; Miller, 2000). Humor has many facets, two of which are humor production (making witty remarks, telling jokes) and humor appreciation (laughing when someone else produces humor). In long-term mating, women prefer men who produce humor, whereas men prefer women who are receptive to their humor (Bressler, Martin, & Balshine, 2006). Precisely why do women value humor in a mate? One theory proposes that humor is an indicator of “good genes” (a fitness indicator) signaling creativity and excellent functioning of complex cognitive skills that are not impaired by a high mutation load (Miller, 2000). Although there is some support for this theory (Bressler et al., 2006), additional studies are needed.

Another set of preferences centers on what women avoid or find intolerable in a mate. Incest avoidance is one of the most important. Reproducing with genetic relatives is known to create “inbreeding depression,” offspring with more health problems and lower intelligence because of the expression of deleterious recessive genes. Evidence is mounting that humans have powerful incest-avoidance mechanisms, such as the emotion of disgust at thought of having sex with a sibling or other genetic relative (Fessler & Navarrete, 2004; Lieberman, Tooby, & Cosmides, 2003). These incest avoidance mechanisms are stronger in women than in men, which is consistent with parental investment theory—given that women have greater obligatory parental investment in offspring, the costs of making a poor mating decision are typically higher for women than for men. Indeed, the characteristic “is my sibling” is one of the most powerful “deal breakers” for women when considering a potential mate, right up there with “beats me up,” “will have sex with other people on a regular basis when he is with me,” and “is addicted to drugs” (Burkett & Cosmides, 2006).

Several studies support the hypothesis that women find a deep voice especially attractive in a potential mate (Evans, Neave, & Wakelin, 2006; Feinberg, Jones, Smith, Moore, DeBruine, Cronwell, et al., 2005; Puts, 2005). Hypotheses for why a deep male voice is attractive are that it signals (1) sexual maturity, (2) a larger body size, (3) good genetic quality, or (4) all of the above. Evidence that voice attractiveness is important to women in mate selection is indicated by the findings that men with attractive-sounding voices have sexual intercourse earlier, have a larger number of sex partners, and are more often chosen

by women as affair partners. These findings, along with direct evidence that women prefer men with a low voice pitch mainly in casual sex partners, suggests that this preference is more central to short-term than to long-term mating (Puts, 2005) (see Chapter 6).

■ CONTEXT EFFECTS ON WOMEN'S MATE PREFERENCES

From an evolutionary perspective, preferences are not predicted to operate blindly, oblivious to context or condition. Just as human desires for particular foods (e.g., ripe fruit) will depend on context (e.g., whether one is hungry or full), women's preferences in a mate should also depend in part on relevant contexts. Several contexts have been explored: the magnitude of resources a woman already has prior to her search for a mate, the temporal context of mating (committed versus casual mating), the menstrual cycle, and the women's mate value.

Effects of Women's Personal Resources on Mate Preferences

An alternative explanation to the evolutionary psychological theory has been offered for the preferences of women for men with resources—the structural powerlessness hypothesis (Buss & Barnes, 1986; Eagly & Wood, 1999). According to this view, because women are typically excluded from power and access to resources, which are largely controlled by men, women seek mates who have power, status, and earning capacity. Women try to marry upward in socioeconomic status because this provides their primary channel for gaining access to resources. Men do not value economic resources in a mate as much as women do because they already have control over these resources and because women have fewer resources anyway.

The society of Bakweri, from Cameroon in West Africa, casts doubt on this theory by illustrating what happens when women have real power (Ardener, Ardener, & Warmington, 1960). Bakweri women hold greater personal and economic power because they have more resources and are in scarcer supply than men. Women secure resources through their own labors on plantations but also from casual sex, which is a lucrative source of income. There are roughly 236 men for every hundred women, an imbalance that results from the continual influx of men from other areas of the country to work on the plantations. Because of the extreme imbalance in numbers of the sexes, women have considerable latitude to exercise their choice in a mate. Women thus have more money than men and more potential mates to choose from. Yet Bakweri women persist in preferring mates with resources. Wives often complain about receiving insufficient support from their husbands. Indeed, lack of sufficient economic provisioning is the reason for divorce most frequently cited by women. Bakweri women change husbands if they find a man who can offer them more money and pay a larger bride-price. When women are in a position to fulfill their evolved preference for a man with resources, they do so. Having dominant control of economic resources apparently does not negate this mate preference.

Professionally and economically successful women in the United States also value resources in men. A study of married couples identified women who were financially successful, as measured by their salary and income, and contrasted their preferences in a mate with those of women with lower salaries and income (Buss, 1989a). The financially

successful women were well educated, tended to hold professional degrees, and had high self-esteem. The study showed that successful women place an even greater value than less professionally successful women on mates who have professional degrees, high social status, and greater intelligence and who are tall, independent, and self-confident. Women's personal income was positively correlated with the income they wanted in an ideal mate (+.31), the desire for a mate who is a college graduate (+.29), and the desire for a mate with a professional degree (+.35). Contrary to the structural powerlessness hypothesis, these women expressed an even stronger preference for high-earning men than did women who are less financially successful.

In a separate study psychologists Michael Wiederman and Elizabeth Allgeier found that college women who expect to earn the most after college put more weight on the promising financial prospects of a potential husband than do women who expect to earn less. Professionally successful women, such as medical and law students, also place heavy importance on a mate's earning capacity (Wiederman & Allgeier, 1992).

Cross-cultural studies consistently find small but positive relationships between women's personal access to economic resources and preferences for mates with resources. A study of 1,670 Spanish women seeking mates through personal advertisements found that women who have more resources and status were more likely to seek men with resources and status (Gil-Burmann, Pelaez, & Sanchez, 2002). A study of 288 Jordanians found that both women and men with high socioeconomic status place more, not less, value on the mate characteristics of having a college graduate degree and being ambitious-industrious (Khalad, 2005). A study of 127 individuals from Serbia concluded that "The high status of women correlated positively with their concern with a potential mate's potential socio-economic status, contrary to the prediction of the socio-structural model" (Todosijevic, Ljubinkovic, & Arancic, 2003, p. 116). An Internet study of 1,851 women found that *attitudes* toward financial and career independence, including items such as "How important is having a career to you?" found that women who endorsed these attitudes valued physical attractiveness more than good financial prospects in a mate (Moore et al., 2006). However, in examining the effects of women's actual income, this study found that "wealthier women prefer good financial prospects over physical attractiveness" (Moore, Cassidy, Smith, & Perrett, 2006, p. 201). Taken together, these results not only fail to support the structural powerlessness hypothesis, they directly contradict it.

Effects of Temporal Context on Women's Mate Preferences

A mating relationship can last for a lifetime, but often matings are of shorter duration. In Chapter 6 we will explore short-term mating in detail, but it is worthwhile to highlight now the findings that show that women's preferences shift as a function of temporal context. Buss and Schmitt (1993) asked undergraduate women to rate sixty-seven characteristics on their desirability in short-term and long-term mates. The rating scale ranged from -3 (extremely undesirable) to +3 (extremely desirable). Women found the following qualities to be more desirable in long-term marriage contexts than in short-term sexual contexts: "ambitious and career-oriented" (average rating, 2.45 in long-term versus 1.04 in short-term), "college graduate" (2.38 versus 1.05), "creative" (1.90 versus 1.29), "devoted to you" (2.80 versus 0.90), "fond of children" (2.93 versus 1.21), "kind" (2.88 versus 2.50), "understanding" (2.93 versus 2.10), "responsible" (2.75 versus 1.75), and "cooperative" (2.41 versus 1.47). These

findings suggest that temporal context matters a great deal for women, causing shifts in their preferences depending on whether a marriage partner or a casual sex partner is sought (Schmitt & Buss, 1996).

In another study evolutionary psychologist Joanna Scheib (1997) constructed stimuli consisting of photographs paired with written descriptions of the personality characteristics presumed to describe the men in each photo. The written descriptions emphasized traits such as dependable, loyal, kind, mature, patient, and so on. Pairs of these photos and accompanying descriptions were shown to 160 heterosexual women. Participants were shown five pairs of the stimulus men and asked to choose one man from each pair. Women tended to select the men with good character traits such as dependable, kind, and mature when choosing a potential husband more than when choosing a short-term sex partner. So by using an experimental manipulation in which women were forced to trade off good looks for character, context-sensitive preferences emerged. In the long-term marital context, women tended to choose character over looks.

Effects of Menstrual Cycle on Mate Preferences

Scientific work points to yet another context that might dramatically affect women's mate preferences: the twenty-eight-day menstrual cycle. The menstrual cycle is theoretically important because a woman's chance of becoming pregnant differs dramatically across the cycle: It is highest in the late follicular phase as a woman approaches ovulation, and lowest in the postovulation luteal phase. Researchers have hypothesized that preferences that occur in the late follicular phase could reflect mate choice for "good genes."

One of the most dramatic effects occurred using the 1,200-frame QuickTime movie described earlier in this chapter (Johnston et al., 2001). Although women in general are attracted to masculine-looking faces, women who were in the high-probability-of-conception phase of their menstrual cycle preferred even more masculine faces than women who were in the low-probability-of-conception phase. A different group of investigators, studying 139 non-pill-taking women in Great Britain, found a similar effect (Penton-Voak & Perrett, 2000). Women in the most fertile follicular phase of their cycle preferred more masculine faces than did women in the less fertile luteal phase. Another study found that women in the most fertile phase of the cycle preferred the odor of men (taken from cotton pads worn for twenty-four hours in their armpits) who scored high on a measure of dominance (Havlicek, Dvorakova, Bartos, & Fegr, 2005).

These researchers interpret these effects as supporting the "good genes" hypothesis. When women are most likely to get pregnant, they are especially attracted to men whose faces have been scored by testosterone, a signal that might honestly advertise a healthy immune system.

Another menstrual cycle shift has been discovered through women's sense of smell. Women not only have a keener sense of smell than men do, women's olfactory acuity peaks at or just before ovulation. Could this spike have an evolved function? Steve Gangestad and Randy Thornhill asked men who varied in symmetry to wear the same T-shirts during two nights without showering or using deodorants (Thornhill & Gangestad, 1999). They instructed the men not to eat any spicy foods—no peppers, garlic, onions, and so on. After two days, they collected the T-shirts and then brought women into the lab to smell them. Women rated each T-shirt on how good or bad it smelled. The fascinating finding was that women

judged the T-shirts worn by symmetrical men as more pleasant smelling (or, for some women, less unpleasant), but only if the women happened to be in the ovulation phase of their menstrual cycle. Ovulating women think symmetrical men smell sexy—or at least sexier than less symmetrical men. These effects have been replicated by independent researchers in different cultures (Rikowski & Grammer, 1999).

In summary, two important context effects have been discovered to be linked to women's menstrual cycle. When women are most likely to conceive, their preference shifts toward more masculine-looking male faces and the scents coming from men who are more symmetrical than their peers. Both shifts might reflect adaptations in women to become fertilized by the healthiest men.

Effects of Women's Mate Value on Mate Preferences

A woman's physical attractiveness and youth are two indicators of her mate value, or overall desirability to men (see Chapter 5). As a consequence, women who are young and more physically attractive have more numerous mating options and so can become choosier in their selections. But does a woman's mate value influence her mate preferences? To find out, evolutionary psychologist Anthony Little and his colleagues had seventy-one women rate themselves on their perceptions of their own physical attractiveness and subsequently showed them photos of men's faces that varied along the masculinity–femininity dimension (Little, Penton-Voak, Burt, & Perrett, 2002). Women's self-rated attractiveness was significantly linked to attraction to masculine faces: The two variables correlated at +.32. Another study found that attractive feminine women expressed stronger preferences for masculine men as long-term mates than did less attractive masculine women (Feinberg, Jones, Smith, Moore, DeBruine, Cronwell, et al., 2006). In a separate study of ninety-one women, the same researchers found that women who view themselves as physically attractive also show a more pronounced preference for symmetrical male faces. In an important control condition they did *not* find such a relationship between women's self-rated attractiveness and a preference for symmetrical female faces. This suggests that the preference shift found with male faces cannot be attributed to judgments of attractiveness in general; rather, it appears to be specific to mate choice.

Recent studies of personal ads in Canada, the United States, and Poland have found that women who are higher in mate value—women who are younger and more physically attractive—specified a longer list of traits that they sought or required in a potential mate than did women lower in mate value (Pawlowski & Dunbar, 1999a; Waynforth & Dunbar, 1995). Nearly identical results have been found in Brazil (Campos, Otta, & Siqueira, 2002) and Japan (Oda, 2001). Furthermore, in questionnaire studies, women who perceive themselves as higher in mate value tended to impose higher minimum standards in what they would require of a long-term mate on a wide variety of characteristics, notably social status, intelligence, and family orientation (Regan, 1998).

Taken together, these studies all point to the same general conclusion: Women who are higher in mate value both prefer and seek men who are higher in mate value as reflected in masculinity, symmetry, and the sheer number of qualities that contribute to men's desirability.

In summary, four contexts have been explored for their effects on women's preferences. The first context pertains to women's personal access to monetary resources. Contrary

to the structural powerlessness hypothesis, when women have more resources, they appear to value income and education more, not less, in a potential husband. The second context pertains to the temporal duration of the relationship. Several studies show that women emphasize character traits over attractiveness when evaluating a potential husband. Qualities such as loyalty, dependability, and kindness weigh more heavily than looks in women's marital preferences.

The third context affecting women's mate preferences is menstrual cycle. When they are more likely to conceive, women prefer the images of men who are more masculine in appearance and the scents of men who are more symmetrical—both likely cues to health. A fourth context is women's mate value. Women who are higher in mate value, more than women who are lower in mate value, prefer masculine and symmetrical men and seek a larger number of characteristics in potential mates when they place a personal ad.

A fifth context that has been recently explored is geographical location. Women living in more densely populated cities as well as cities where there is a higher cost of living make greater demands for resources in a mate in their personal ads (McGraw, 2002). Taken together, these context effects reveal that women's mate preferences show the hallmarks of adaptation: design features that are specialized for solving the complex adaptive problems of mate selection.

■ HOW WOMEN'S MATE PREFERENCES AFFECT ACTUAL MATING BEHAVIOR

For preferences to evolve, they must affect actual mating decisions because it is those decisions that have reproductive consequences. For a number of reasons, however, preferences should not show a *perfect* correspondence with actual mating behavior. People can't always get what they want for a variety of reasons. First, there is a limited number of highly desirable potential mates. Second, one's own mate value limits access to those who are highly desirable. In general only the most desirable women are in a position to attract the most desirable men, and vice versa. Third, parents and other kin sometimes influence one's mating decisions, regardless of personal preferences. Despite these factors, women's mate preferences must have affected their actual mating decisions some of the time over the course of human evolutionary history or they would not have evolved. Following are several sources of evidence that preferences do affect mating decisions.

Women's Responses to Men's Personal Ads

One source of evidence comes from women's responses to personal ads posted by men in newspapers. If women's preferences affected their mating decisions, then they would be predicted to respond more often to men who indicate that they are financially well off. Baize and Schroeder (1995) tested this prediction using a sample of 120 personal ads placed in two different newspapers, one from the West Coast and the other from the Midwest. The authors mailed a questionnaire to those who posted the ads, asking for information about personal status, response rate, and personality characteristics.

Several variables significantly predicted the number of letters men received in response to their ads. First, *age* was a significant predictor, with women responding more

often to older men than to younger men ($r = +.43$). Second, *income* and *education* were also significant predictors, with women responding more to men with ads indicating higher salaries ($r = +.30$) and more years of education ($r = +.37$). Baize and Schroeder ended their article on a humorous note by recalling the question posed by Tim Hardin in his famous folk song: “If I were a carpenter and you were a lady, would you marry me anyway, would you have my baby?” Given the cumulative research findings, the most likely answer is: No.

Similar results have now been found in Poland in a study of response rates to ads placed by 551 men (Pawlowski & Koziel, 2002). Men with higher levels of education, men who were somewhat older, men who were taller, and men who offered more resources all received a larger number of responses from women than did men who lacked these qualities.

Women's Marriages to Men High in Occupational Status

A second source of findings pertains to women who are in a position to get what they want—women who have the qualities that men desire in a mate such as physical attractiveness (see Chapter 5). What are the mate choices of these women? In three separate sociological studies, researchers discovered that physically attractive women in fact marry men who are higher in social status and financial holdings than do women who are less attractive (Elder, 1969; Taylor & Glenn, 1976; Udry & Ekland, 1984). In one study, the physical attractiveness of women was correlated with the occupational prestige of their husbands (Taylor and Glenn, 1976). For different groups the correlations were all positive, ranging between $.23$ and $.37$.

A longitudinal study was conducted at the Institute of Human Development in Berkeley, California (Elder, 1969). Physical attractiveness ratings were made by staff members of then unmarried women when they were adolescents. This sample of women was then followed up in adulthood after they had married, and the occupational statuses of their husbands were assessed.

The results were examined separately for working-class and middle-class women. The correlations between a woman's attractiveness in adolescence and her husband's occupational status roughly a decade later was $.46$ for women with working-class backgrounds and $.35$ for women coming from middle-class backgrounds. For the sample as a whole, a woman's physical attractiveness correlated more strongly with her husband's status ($.43$) than did other women's variables such as class of origin ($.27$) or IQ ($.14$). In sum, attractiveness in women appears to be an important path to upward mobility; women who are most in a position to get what they want appear to select men who have the qualities that most women desire—men with status and resources.

Women's Marriages to Men Who Are Older

A third source of data on women's actual mate choices comes from demographic statistics on the age differences between brides and grooms at marriage. Recall that women express a desire for men who are somewhat older. Specifically, in the international study of thirty-seven cultures, on average women preferred men who were 3.42 years older (Buss, 1989a). Demographic data on actual age differences were secured from twenty-seven of these countries. From this sample, the actual age difference between brides and grooms was 2.99 years. In every country, grooms were older on average than brides, ranging from a low of 2.17 years for Ireland to a high of 4.92 years for Greece. In short, women's preferences for older

husbands translates into actual marriages to older men. Actual mating decisions of women accord well with their expressed preferences.

Effects of Women's Preferences on Men's Behavior

Another indication of the potency of women's mate preferences comes from their effects on men's behavior. The theory of sexual selection predicts that the mate preferences of one sex should establish domains of mate competition in the opposite sex. If women value resources, for example, men should compete with each other to acquire and display those resources in mate competition. Many studies document exactly that. In studies of tactics of attraction, men are more likely than women to display resources, talk about their professional successes, flash money, drive expensive cars, and brag about their accomplishments (Buss, 1988b; Schmitt & Buss, 1996). When men derogate their competitors, they use tactics such as indicating that a rival is poor, lacks ambition, and is unlikely to succeed professionally (Buss & Dedden, 1990; Schmitt & Buss, 1996). In studies of deception tactics, men are more likely than women to inflate their status, prestige, and income to potential mates (Haselton, Buss, Oubaid, & Angleitner, 2005).



Mere exposure to an attractive woman activates a cascade of psychological processes in men, such that they place greater value on the qualities that women want (resources, ambition) and describe themselves as possessing those qualities (see text for a description of the studies).

Roney (2003) hypothesized that mere exposure to attractive women would activate cognitive adaptations in men designed to embody the qualities that women want in a mate. Specifically, he predicted that exposure to young attractive women would (1) increase the importance men place on their own financial success, (2) experience feeling more ambitious, and (3) produce self-descriptions that correspond to what women want. Using a cover story to disguise the purpose of the study, Roney had one group of men rate the effectiveness of advertisements containing young attractive models and another group of men rate the effectiveness of ads containing older less-attractive models. Following this exposure, the men responded to the key measures to test his hypotheses.

When asked "With respect to your job/career you would like to have, how important are the following to you?" The rating scale ranged from 1 (not important) to 7 (very important). Men exposed to young attractive women rated "having a large income" to be 5.09, whereas men exposed to older less attractive models rated it only 3.27—an astonishing large effect size. Similar differences occurred for the rated importance of "being financially successful." A full 60

percent of the men exposed to young attractive models described themselves as “ambitious,” compared to 9 percent of the men exposed to older less attractive models. The former men also rated themselves as feeling more ambitious. Another study found that merely having a young woman in the same room caused men to increase the importance they attach to having material wealth (Roney, 2003). Similar effects have been found by independent researchers. Men “primed” with attractive images of women display more creativity, independence, and nonconformity, causing them to stand out from other men (Griskevicius, Cialdini, & Kenrick, 2006; Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006). In short, when mating motives are “primed” by exposure to young attractive women, a cascade of psychological shifts occurs in men such that they value and display precisely what women want and hence what men need to succeed in mate competition.

■ SUMMARY

We now have the outlines of an answer to the mystery of women’s long-term mate preferences. Modern women have inherited from their successful ancestors wisdom about the men they consent to mate with. Ancestral women who mated indiscriminately were likely to have been less reproductively successful than those who exercised choice. Long-term mates bring with them a treasure trove of assets. Selecting a long-term mate who has the relevant assets is clearly an extraordinarily complex endeavor. It involves a number of distinctive preferences, each corresponding to a resource that helps women solve critical adaptive problems.

That women seek resources in a marriage partner might seem obvious. Because resources cannot always be directly discerned, however, women’s mating preferences are keyed to other qualities that signal the likely possession, or future acquisition, of resources. Indeed, women may be less influenced by money per se than by qualities that lead to resources, such as ambition, intelligence, and older age. Women scrutinize these personal qualities carefully because they reveal a man’s potential.

Potential, however, is not enough. Because many men with a rich resource potential are themselves highly discriminating and are at times content with casual sex, women are faced with the problem of commitment. Seeking love is one solution to the commitment problem. Acts of love signal that a man has in fact committed to a particular woman.

To have the love and commitment of a man who could be easily downed by other men in the physical arena, however, would have been a problematic asset for ancestral women. Women mated with small, weak men lacking physical prowess and courage would have risked damage from other men and loss of the couple’s joint resources. Tall, strong, athletic men offered ancestral women protection. In this way, their personal well-being and their children’s well-being could be secured against incursion. Modern women are the descendants of successful women who selected men in part for their strength and prowess.

Finally, resources, commitment, and protection do a woman little good if her husband becomes diseased or dies or if the couple is so mismatched that the partners fail to function as an effective team. The premium that women place on a man’s health ensures that husbands will be capable of providing these benefits over the long haul. And the premium that women place on similarity of interests and traits with their mate helps to ensure fidelity and stability. These multiple facets of current women’s mating preferences thus correspond well to adaptive problems faced by our female ancestors thousands of years ago.

BOX 4.1

What about Lesbian Sexual Orientation?

Although there have been several theories that have attempted to explain male homosexual orientation (see Chapter 5), practically no efforts have been made to explain the puzzle of primary or exclusive lesbian orientation, which occurs in 1 to 2 percent of women (Bailey, Kim, Hills, & Linsenmeier, 1997). As many theorists, such as Mike Bailey, Frank Muscarella, and James Dabbs, have pointed out, homosexuality is not a singular phenomenon. Lesbianism and male homosexuality, for example, appear to be quite different: Male sexual orientation tends to appear early in development, whereas female sexuality appears to be far more flexible over the lifespan (Baumeister, 2000). Future theories might also attend to the large individual differences within those currently classified as "lesbian" and "gay." For example, mate preferences vary across lesbians who describe themselves as "butch" as opposed to "femme" (Bailey et al., 1997; Bassett, Pearcey, & Dabbs, 2001). Butch lesbians tend to be more masculine, dominant, and assertive, whereas femme lesbians tend to be more sensitive, cheerful, and feminine. The differences are more than merely psychological; butch lesbians, compared to their

femme peers, have higher levels of circulating testosterone, more masculine waist-to-hip ratios, more permissive attitudes toward casual sex, and less desire to have children (Singh, Vidaurre, Zambarano, & Dabbs, 1999). Femme lesbians place greater importance than butch lesbians on financial resources in a potential romantic partner and experience sexual jealousy over rivals who are more physically attractive. Butch lesbians place less value on financial resources when seeking partners but experience greater jealousy over rival competitors who are more financially successful. The psychological, morphological, and hormonal correlates imply that "butch" and "femme" are not merely arbitrary labels but rather reflect genuine individual differences.

Despite the recent theoretical and empirical attention to understanding and explaining homosexual orientation and same-sex sexual behavior, their origins remain scientific mysteries. Progress might accelerate with the realization of the possibility that there may be no single theory that can fully explain both gay males and lesbians, much less one that can explain the profound individual differences among those with a same-sex sexual orientation.

Women's preferences are not rigid or invariant but rather change in important and adaptive ways across at least five contexts: their personal access to resources, temporal context, menstrual cycle, personal mate value, and the resource demands of the city in which they live. Preferences also shift as a function of sexual orientation (see Box 4.1). According to the structural powerlessness hypothesis, women who have a lot of personal access to resources are predicted not to value resources in a mate as much as women lacking resources. This hypothesis receives no support from the existing empirical data, however. Indeed, women with high incomes value a potential mate's income and education more, not less, than women with lower incomes. Women also show sensitivity to the contexts of long-term versus short-term mating. Specifically, in long-term mating contexts women especially value qualities that signal that the man will be a good provider and a good father. These qualities are considerably less important in women's desires in a short-term mate. Women's menstrual cycles also affect mate preferences. When women have the highest possibility of getting pregnant, they prefer men who are more masculine and symmetrical than when they are less likely to conceive. Finally, women who are higher in mate value have stronger preferences for men who are masculine and symmetrical, and they demand a larger number of characteristics in the ads they place seeking long-term mates.

For preferences to evolve, they must have had a recurrent impact on actual mating behavior. We do not expect that women's preferences will show a one-to-one correspondence with behavior. People cannot always get what they want. Nonetheless, several lines of research support the notion that women's preferences do in fact affect actual mating behavior. Women respond more to personal ads in which men indicate good financial status. Women who embody what men desire (e.g., by being physically attractive) are in the best position to get what they want, and so their mate selections are most revealing. Several studies show that physically attractive women do indeed tend to marry men with higher incomes and occupational status. Demographic statistics further show that women worldwide tend to marry older men, which directly corresponds to women's expressed preference for such men. Finally, women's preferences have strong effects on men's behavior. Men are more likely than women to display resources in their attraction tactics and to derogate their competitors using verbal slurs that indicate that their rivals are poor and lack ambition. The mere exposure of men to young attractive women activates a psychological cascade in men, such that they increase the importance they attach to financial success and feel more ambitious. Portions of men's behavior, in short, can be predicted from what women want in a mate. On the basis of this cumulation of studies, it is reasonable to conclude that women's mate preferences have a substantial impact on their own mating behavior.

■ SUGGESTED READINGS

- Buss, D. M. (2003). *The evolution of desire: Strategies of human mating* (rev. ed.). New York: Free Press.
- Johnston, V. S., Hagel, R., Franklin, M., Fink, B., & Grammer, K. (2001). Male facial attractiveness: Evidence for hormone-mediated adaptive design. *Evolution and Human Behavior*, 22, 251–267.
- Miller, G. (2001). *The mating mind*. New York: Anchor Books.
- Regan, P. C. (1998). Minimum mate selection standards as a function of perceived mate value, relationship context, and gender. *Journal of Psychology and Human Sexuality*, 10, 53–73.
- Roney, J. R., Hanson, K. N., Durante, K. M., & Maestripieri, D. (2006). Reading men's faces: Women's mate attractiveness judgments track men's testosterone and interest in infants. *Proceedings of the Royal Society, B*, 273, 2169–2175.
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man: 1871–1971* (pp. 136–179). Chicago: Aldine.