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Sexual Strategies Theory: Historical Origins and Current Status

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In sexually reproducing organisms, no domain is more closely linked with the engine of the evolutionary process than sexuality. Men and women over human evolutionary history have confronted different adaptive problems in the sexual domain. Sexual Strategies Theory offers an account of these adaptive problems and presents a view of human sexual psychology as a rich repertoire of mechanisms that have evolved as adaptive solutions. A host of specific predictions about human sexuality follows from this analysis, including an account of sex differences in the desire for sexual variety, the qualities preferred in short-term and long-term mates, context-dependent shifts in mate preferences, the nature of sexual jealousy, the tactics that are effective for attracting and retaining a mate, and the causes of sexual conflict between men and women. After reviewing the theory's historical origins, I summarize a portion of the extensive empirical research designed to test its tenets. An evaluation of the theory notes its strengths as well as its weaknesses, with a special focus on the issues of prediction and falsification. It ends with a challenge for other theories of human sexuality to reach an equivalent level of specific predictions, a comparable empirical foundation, an equally parsimonious account of sex differences, a compelling ultimate account of causal origins, and a comparable level of multi-level conceptual integration.

Charles Darwin's great discovery was that recurrent differential reproduction caused by differences in design attributes—natural selection—is the key to evolutionary change over time (Darwin, 1859). Because reproduction is central to the evolutionary process, domains closely linked with reproduction should be focal targets of selection pressures and, hence, loci for evolved mechanisms or adaptations. No domain is closer to reproduction than sexuality. If the process of selection has not affected the evolution of human sexuality, then it is unlikely to have affected domains less directly linked with reproduction.

Darwin adopted Spencer's phrase "survival of the fittest" to summarize the process of natural selection, but this choice was unfortunate. Survival is certainly critical. Many adaptations of organisms exist because they successfully overcame the forces that impeded survival, the "hostile forces of nature," such as parasites, diseases, food shortages, predators, and extremes of climate and weather. Our fears of snakes, spiders, heights, darkness, and strangers, for example, are likely the psychological remnants of our psychology of survival, sculpted in an environment long gone.

Many people who lack evolutionary expertise, however, equate evolution by natural selection with survival selection. This is a mistake. Differential reproductive success linked with differences in heritable design features, not differential survival success, is the core of the process of natural selection. Survival only becomes important to the extent that it is tributary to reproduction.

Darwin had a wonderful habit that serves as an exemplar to modern scientists. He kept a special notebook to write down observations that seemed to falsify his theory. Darwin did this because he realized that he had a tendency to forget these anomalous observations, more than a century ago presaging psychological research on cognitive biases such as the tendency of people to search selectively for evidence that confirms held hypotheses (Johnson-Laird, 1983).

In this notebook, Darwin wrote several observations that seemed puzzling based on his theory of natural selection. He noticed the brilliant plumage of certain bird species and wondered how it could possibly have evolved. Such plumage is energetically costly and renders the birds more vulnerable to predation. This seemed to contradict "survival selec-

tion," and indeed it was difficult to imagine how these cumbersome features could possibly aid reproduction.

Next he noticed that the two sexes were sometimes quite different in structure. Often the males were larger than the females, sometimes exceeding their weight by two or four times. Furthermore, even when the sexes were roughly the same size, it was not uncommon that the females were drab and the males displayed gaudy features—luminescent plumage, unwieldy antlers, and other strange features that appeared to have nothing at all to do with survival. Because the sexes faced similar survival problems, how could these sex differences evolve? Why did the males tend to possess the strange and gaudy features, whereas the females were often drab by comparison?

In response to apparent anomalies of this sort, Darwin (1871) fashioned what he believed to be a second evolutionary process, which he called *sexual selection*. According to sexual selection theory, characteristics that give organisms an advantage in the

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competition for mates, as contrasted with enhanced survival, can evolve. Sexual selection can operate through two processes. The first is intrasexual or same-sex competition. If members of one sex compete with one another, and the victors of these competitions gain preferential sexual access to mates, then whatever qualities lead to success in same-sex competitions will be selected and can evolve over time. The large antlers of stags represent a prototypical image of this sort of intrasexual selection, but the logic extends to all qualities that might give an advantage in same-sex competition. These might include athletic ability, piloerection (hair standing on end to scare away a competitor), social skills to enlist allies, or even a biting sense of humor that deters a rival. The key point is that whatever qualities lead to success in same-sex competitions can evolve because of the reproductive advantage that accrues to the victor through increasing sexual access.

The second component of sexual selection involves mate choice. If members of one sex display a consensus about the qualities that are desired in mates, then those who possess the desired qualities have a preferential mating advantage. Those lacking the desired qualities get shunned and selectively excluded. Because the descendants of this process are more likely to carry both the preferences and the characteristics preferred, the two may co-evolve over time (Darwin, 1871; see also Fisher, 1930/1958). Sexual selection through mate choice ultimately reduces to mate competition, because those possessing desired features have a competitive mating advantage over those of the same sex who lack the desired features.

In sum, intrasexual competition and intersexual selection are the two processes by which characteristics can evolve. They evolve not because of any survival advantage, but rather because of reproductive advantage acquired through successful mate competition. This theory resolved the problem of the anomalies Darwin

noted. It explained the brilliant plumage and other strange structures, which evolved because of the mating advantage they gave organisms. The theory explained many sex differences, because such differences commonly were linked with design features that gave organisms an advantage in competing with members of their sex. But the theory of sexual selection remained controversial within biology and, in fact, was largely ignored for many decades after Darwin published his major treatise on it in 1871.

Historical Emergence of Sexual Selection

Darwin's theory of sexual selection contained an important gap—it failed to explain the origins of mate choice (Andersson, 1994). Darwin had merely pointed to the existence of mate preferences but had no explanation for how they might arise. The next major development in sexual selection theory came in 1930, with the publication of R. A. Fisher's book, *The Genetical Theory of Natural Selection*.

Fisher's theory of "runaway selection." Fisher (1930/1958) filled the gap left by Darwin by proposing a two-step process. First, suppose that there is genetic variation in a trait such as tail length, and males with slightly longer tails survive more than those with slightly shorter tails (e.g., because of the greater agility or gliding power afforded by the longer tail). Now, suppose that there is genetic variation among females in their tendency to choose males of differing tail lengths. Given these conditions, females who prefer to mate with the longer-tailed males will bear sons with longer tails who will survive better than short-tailed males. If this process recurs over generations, genes for long tails will spread, as will genes for the female preference for long-tailed males.

Over evolutionary time, a new effect will then emerge. The males with longer tails will not only survive longer, they will also enjoy greater

mating success. As the genes for the female preference for long-tailed males become increasingly common, the males with long tails will increasingly experience greater mating success. Thus, females with a preference for long-tailed males will bear "sexy sons" who are highly attractive to females. This feedback loop produces a "runaway process," such that the female preference for long tails and the length of males' tails will co-evolve at an accelerating pace until halted by the process of natural selection. In short, Fisher provided one key missing ingredient in Darwin's theory of sexual selection—a theory about how mate preferences might evolve.

Unfortunately, Fisher's (1930) treatise was largely ignored in the field of evolutionary biology for reasons that are not entirely clear. Perhaps the notion of female choice was seen as granting too much power to females, who were often assumed to be passive in the mating process. Perhaps Fisher's treatise was too mathematical and may have been difficult for many to understand. Regardless of the reasons, it was not until several decades later that the theory of sexual selection again resurfaced, this time with tremendous force.

The controversy surrounding sexual selection culminated in a resolution that changed the shape of evolutionary biology. Over the past three decades, sexual selection theory has emerged as not only a viable account of the anomalies Darwin noted but recognized as a common and pervasive process affecting many aspects of sexually reproducing organisms (see Cronin, 1991). Indeed, sexual selection provides the leading theoretical account of the origins of the large 1,400-cubic centimeter brain that humans have, representing a near tripling in size over the past two million years (see, e.g., Humphrey, 1976).

Trivers's theory of parental investment. Darwin's theory of sexual selection described the processes by which adaptive specializations for

mate selection and intrasexual competition could emerge. Fisher's theory provided a plausible explanation for how a mate preference might emerge. But sexual selection theory lacked two related ingredients—a specification of what drove the two processes (e.g., why the males of many species, but not the females, engage in intrasexual combat) and what the content of mate choice might be. The task was left to Robert Trivers, then a graduate student at Harvard University, to begin to fill these two critical gaps.

Trivers (1972) reasoned that the relative parental investment of the sexes in their offspring determined which of the two components of sexual selection was operative for each sex. Parental investment can be defined as any time, energy, or effort expended to aid the survival and reproduction of one offspring at the expense of other forms of investment, such as effort devoted to intrasexual competition. Thus, parental investment is defined by decrements in a parent's residual reproductive value, including any reduction in the parent's survival, fecundity, mating success, or ability to invest in other relatives (Clutton-Brock, 1991). A mammal mother's internal fertilization, gestation, and placentation, for example, are all forms of parental investment.

Trivers reasoned that the sex that invests more in offspring should be more selective in choice of mates. The high-investing sex engages the intersexual component of sexual selection. By exercising choice, the higher investing sex can select mates on a variety of grounds, depending on the particular species, to increase survival and reproduction or the survival and reproduction of her offspring. This can range from selecting mates with "good genes" on one end to selecting mates who show a willingness to invest in her offspring on the other. The particular content of the selectivity depends on the species, its habitat, and the social context in which it lives.

The low-investing sex, on the other hand, should be more competitive with

members of their own sex for sexual access to the higher investing sex. The higher investing sex becomes a valuable reproductive resource over which the lower investing sex competes. The intrasexual competition component of sexual selection, in short, should be engaged most intensely by the lower investing sex.

The two components of sexual selection become connected, or the distinction blurred, because the mate preferences of one sex can determine the content of the competition in the other. If females desire males with territory, for example, then that exerts selection pressure on males to compete with one another to acquire what females desire. Those that succeed in besting their intrasexual competitors in fulfilling these desires enjoy preferential sexual access. Those that fail suffer sexual exclusion.

This situation becomes especially complex (and interesting) in biparental species such as ours, in which both sexes invest. In such species, both sexes exert considerable selectivity in their choice of mates, and both sexes compete intensely with members of their sex for access to desirable members of the opposite sex.

So the groundwork was established in 1972, more than a century after Darwin first advanced the revolutionary theory of sexual selection, for understanding many remarkable features of animal sexuality. Thus, sexual selection theory guided research in animal biology, part of a broader scientific revolution that swept the field. But the means to apply this theory to understanding human sexuality remained obscure until the end of that decade, when the first major treatise on the evolutionary psychology of human sexuality appeared.

Evolutionary Sexual Psychology

This treatise was *The Evolution of Human Sexuality*, published in 1979 by Donald Symons. The book contained a large introductory discussion of the logic of evolutionary psychology, prior to discussing various aspects of

human sexuality proper. The following points constituted conceptual contributions of Symons's 1979 treatise, elaborated in subsequent discussions (Symons, 1987, 1992).

Adaptations and byproducts. All products of the evolutionary process can be partitioned into three categories—adaptations, byproducts of adaptations, and noise. Symons (1979), drawing heavily on Williams (1966), argued that adaptation is an "onerous concept" and should only be invoked when rigorous evidentiary standards have been met. We do not posit that flying fish have a special adaptation to return to water after leaping in the air, because a simpler and more parsimonious explanation—gravity—does the job. The criterion for adaptation is special design; attributes such as economy, efficiency, complexity, precision, reliability of development, and functionality in solving a specific problem are ways of detecting special design (see Tooby & Cosmides, 1992, for an extended discussion of adaptation). Adaptations are the primary products of selection.

Some characteristics of organic beings are not adaptations, but instead are merely byproducts of adaptations. In the realm of artificial functional inventions, for example, the light produced by a light bulb is its proper function, but the heat it produces is not. Heat is an incidental byproduct, not part of the *raison d'être* for which the bulb was designed. The hypothesis that something is an incidental byproduct should be treated as a scientific hypothesis, one that requires specifying the design of the adaptation responsible for producing the byproduct (Tooby & Cosmides, 1992).

The third product of the evolutionary process is noise—random variations that tend to be incidental to the functional design of a mechanism. Minor deviations from smoothness on the surface of the glass encasement for a light bulb, for example, represent noise introduced randomly in the process of light bulb construction. Similarly, in human development,

random perturbations create imperfections in the formation of evolved mechanisms that are usually incidental to their basic functioning. Deviations from perfect bilateral facial symmetry, for example, usually represent random perturbations because of the inability of the organism to maintain perfect homeostasis in the course of development. To the degree that one sees organized complexity in an organic trait or mechanism, random variation or noise is unlikely as an explanation.

In sum, all complex human characteristics, including our sexual characteristics, represent either adaptations or byproducts of adaptations. Because a hypothesis about a byproduct requires the specification of the adaptation of which it is a byproduct, characterizing adaptation is an essential, not an optional, part of understanding human sexual psychology.

Psychology versus behavior. Symons (1979) clarified an important source of conceptual confusion in the sexuality literature. Perhaps because of the reign of behaviorism in the social sciences in this century, manifest behavior was viewed as the only or primary locus of scientific scrutiny. Symons argued that behavior, considered alone, can be misleading.

Consider short-term heterosexual sexual encounters. Mathematically, the number of short-term sexual encounters is constrained to be identical, on average, for men and women. Each time a woman has sex with a man with whom she has never had sex, a man is simultaneously doing the same. But this identity in behavior may conceal a difference in desire—men more than women, as is widely documented, desire a large number of short-term sexual partners (Buss & Schmitt, 1993; Symons, 1979). Thus, an important difference in the sexual psychology of men and women is obscured by restricting examination to actual sexual behavior.

Manifest behavior is one primary output of our evolved psychological mechanisms, and making the distinction between mechanisms and their

behavioral output clarifies many sources of confusion. In this instance, it suggests that hypotheses about sex differences in sexuality are more fruitfully sought at the level of psychological mechanisms than at the level of manifest behavior. Because sexual desires are constrained by so many factors—notably the willingness of desired partners to comply with the desire—manifest behavior can be misleading.

The nature of sexual psychological mechanisms. Another contribution of the Symons (1979) treatise was to clarify the nature of evolved psychological mechanisms. The dominant assumption in mainstream psychology was that psychological mechanisms are few and highly domain general. Skinner's laws of operant conditioning were prototypes of these domain-general mechanisms, which were presumed to operate in essentially the same manner across different arenas such as food selection and mate selection. Symons, in contrast, argued that our psychological mechanisms are likely to be particular, each linked to a specific adaptive problem, and numerous, corresponding to the many different sorts of adaptive problems humans have faced.

The arguments for domain specificity and numerosity are several, but a few key ones involve problem specificity and combinatorial explosion. Problem specificity suggests that successful solutions to one adaptive problem do little to solve other adaptive problems. Selecting a reproductively valuable mate, for example, requires a different set of solution criteria than selecting a nutritively valuable food object for consumption. Because consumption and consummation require different solutions, it is extremely unlikely that one general mechanism can provide adaptive solutions to both.

Combinatorial explosion—the outcome of producing millions of possible behavioral sequences as a result of the geometric increase in unconstrained systems—is a problem confronted by all domain-general mechanisms (Cos-

mides & Tooby, 1994). Because successful adaptive solutions represent tiny pockets amid the vast design space of possibilities, organisms need specific mechanisms to prevent producing millions of non-adaptive outcomes. Domain-general mechanisms, because they fail to channel behavior toward the narrow adaptive pockets, collapse under this constraint. For these and other reasons, evolutionary psychologists assume that evolved psychological mechanisms are likely to be many, specific, and functional.

Sex differences in sexuality. Symons's next contribution entailed outlining several major arenas in which men and women have faced different adaptive problems in the domain of sexuality, outlining a series of hypotheses about sex differences in sexuality, and summarizing the limited empirical evidence from the then-available anthropological and psychological record.

Because women are clearly the higher investing sex in our species, for example, ancestral men more than women could have benefited in reproductive currencies by securing sexual access to a variety of partners. This selection pressure, Symons argued, could have selected for a different sexual psychology of desire, specifically for men having a greater desire for sexual variety. Symons further argued that men and women should have different mate-selection preferences, with men focusing more on aspects of women that signal high fertility or reproductive value and women focusing more on the aspects of men that signal the external provisioning of the woman and her children.

But Symons did not argue that all aspects of human sexuality represented adaptations. In undoubtedly the most controversial aspect of his treatise, he argued that there was no evidence that women's capacity for sexual orgasm was an adaptation; rather, it was likely to be an incidental byproduct. Just as men have nipples that are functionless, an incidental byproduct of the design shared by the sexes that

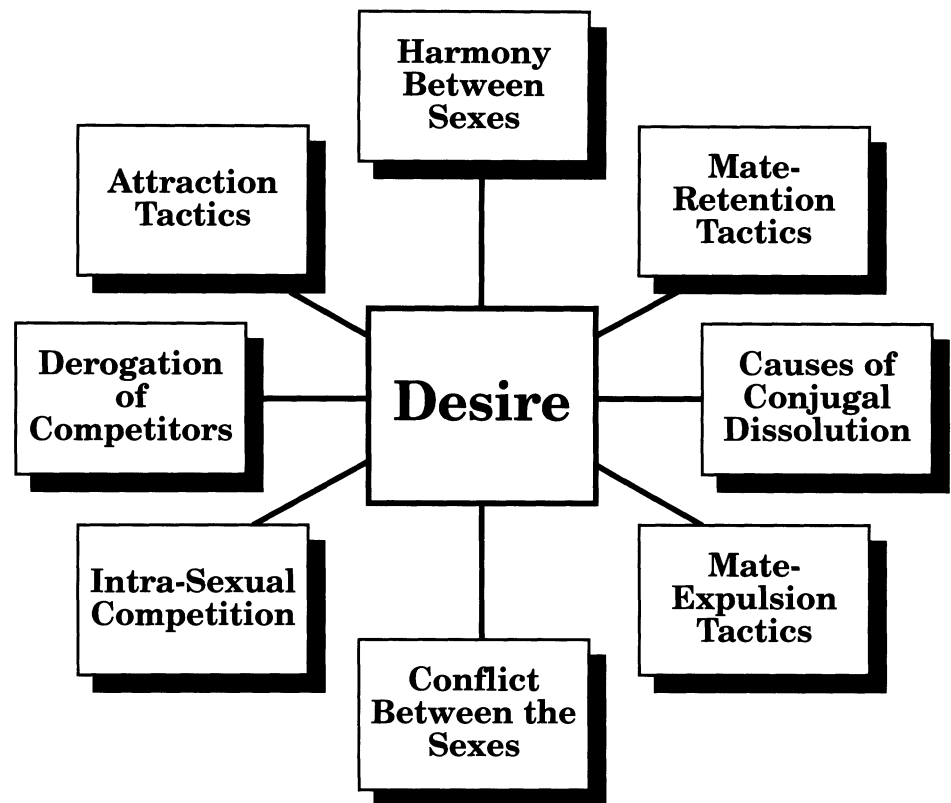
produces functional nipples in women, female orgasm, he argued, could be an incidental product of common design that selected for male orgasm. Although Symons may or may not be correct in this specific hypothesis, one central value of his treatise was identifying several domains in which the sexes might differ in their sexual psychology, highlighting the fact that not all aspects of sexuality are adaptations proper, and formulating testable predictions about human sexual psychology.

The Focus—Desire as the Foundation of Sexual Psychology

Evolutionary psychology is properly considered to be an overarching conceptual framework, and as such, there can be many different (and competing) theories about the evolution of human sexuality (Buss, 1995). With respect to female orgasm, for example, there are theories (or hypotheses) that it evolved for a specific function, such as facilitating sperm transport, assuaging men's doubts about paternity, or identifying "Mr. Right," as well as the hypothesis that it is an incidental byproduct. Thus, there are competing evolutionary theories, each of which is compatible with the larger conceptual perspective. Scientific competition among the theories is adjudicated by criteria such as empirical evidence, parsimony, and ability to generate novel predictions. In the remainder of this article I focus on one evolutionary theory of human sexuality—Sexual Strategies Theory (Buss, 1994; Buss & Schmitt, 1993).

According to this theory, desire lies at the foundation of sexuality and human mating (see Figure 1). The focus of the theory, therefore, centers on identifying desires and all manifold consequences of desires. The desires of one sex, for example, determine which tactics of attraction are effective when used by the opposite sex. The pursuit of a desire by one sex that interferes with the desires of the opposite sex, to take another example, is the major source of conflict between the sexes. Within relationships, violations of de-

Figure 1. Windows on Desire



sires constitute key causes of conjugal dissolution. The fulfillment of desires within a relationship, in contrast, constitutes effective mate-retention tactics and produces harmony between the sexes.

The focus of Sexual Strategies Theory, in short, is on desire and all of its interpersonal ramifications—attraction tactics, derogation of competitor tactics, conflict between the sexes, mate-expulsion tactics, causes of conjugal dissolution, mate-retention tactics, and harmony between the sexes.

Basic Assumptions of Evolutionary Psychology

The basic assumptions of Sexual Strategies Theory can be divided into general assumptions anchored in evolutionary psychology and specific assumptions about the evolution of human sexuality. In this section I consider the basic assumptions of evolutionary psychology.

All sexual psychological mechanisms owe their existence to evolution

by selection. Evolution by selection is the only causal process powerful enough to produce complex organic mechanisms, including sexual mechanisms. If another causal process exists, it has not been made generally known to the scientific community (Daly & Wilson, 1988).

Psychological mechanisms constitute a key locus of sexual adaptation. All psychological mechanisms, of course, have an underlying physical (physiological, neurological) substrate. But the psychological level of description, in information-processing terms, is central to the understanding of evolved mechanisms. A word processing program can be run on different physical systems, such as an IBM or a Mac computer. But regardless of the physical instantiation, it can be described in information-processing functional terms. Similarly, regardless of the underlying physical instantiation of psychological mechanisms, they are usefully described in psychological or information-processing terms.

Evolved mechanisms are sensitive to context and are functional. Mechanisms evolve in response to specific environmental contingencies. They are not blind or robotic, nor do they express themselves in invariant ways, insensitive to context. The flexibility of human behavior is caused by the large collection of evolved mechanisms, activated selectively and sequentially, depending upon context. They are functional, which means that they exist in the form that they do because they solved in ancestral environments specific problems of survival or reproduction—problems that were ultimately tributary to fitness.

Men and women have faced different adaptive problems over human evolutionary history. The evolutionary framework provides a specific set of predictions about the locus of sex differences and sexual similarities. Sex differences in sexuality are only predicted in the specific domains in which the sexes have faced different adaptive problems. In domains where the sexes have confronted similar adaptive problems, the sexes are predicted to be similar in their sexual psychology.

Basic Premises of Sexual Strategies Theory

This section outlines the basic premises of a specific theory of human sexual strategies (Buss & Schmitt, 1993). Other evolutionary theories of human mating offer competing hypotheses. Some theorists, for example, have argued that humans have evolved primarily for long-term monogamous mating (e.g., Lovejoy, 1981). Others have argued that humans are inherently sexually promiscuous (e.g., Small, 1992). Sexual strategies theorists, in contrast, argue that humans have a complex repertoire of mating strategies, both short-term and long term, each activated differently depending on context.

Men and women have evolved a strategic repertoire consisting of both short-term and long-term sexual strategies. Chimpanzees, our closest

primate relatives, have primarily a short-term sexual strategy. Mating takes place primarily when the females enter estrus, and the males do practically nothing to help raise the offspring. Humans, in contrast, have evolved a more complex repertoire of strategies, including long-term mating characterized by attachment between parents and biparental care. Short-term mating, however, can occur before settling on a long-term mate, in between bouts of long-term mating, or during the course of long-term mating in the form of brief affairs.

Different adaptive problems must be solved when pursuing a short-term as opposed to a long-term sexual strategy. The successful pursuit of a strategy requires the solution of specific adaptive problems. A short-term strategy, for example, requires sexual motivation to mate with a variety of partners and the ability to identify partners who are immediately sexually accessible. A long-term strategy, in contrast, involves assessment of future trajectories of potential partners on dimensions central to reproductively relevant resources.

Because men and women differ in minimum obligatory parental investment, men devote a larger proportion of their total mating effort than do women to short-term mating. To produce a single child, women must undergo the burdens of a nine-month gestation, which is costly in time, energy, opportunity costs, increased vulnerability, and risk during childbirth. This is the minimum investment, and it is obligatory. Men's minimum obligatory investment is a single act of sexual intercourse. Men typically invest much more, of course, but the key point is that these differences in minimum obligatory investment produce a different benefit structure, in the currency of reproductive success, to short-term sexual strategies. Specifically, men in our evolutionary past could increase their reproduction by mating with a variety of women directly resulting in an increased number of children. An an-

cestral woman having sex with 100 men in 1 year could still not produce more than a single child. Thus, men are predicted to devote a larger share of their mating effort, compared with women, to sexual access to a variety of partners.

A task analysis of men's short-term sexual strategy suggests four relatively distinct adaptive problems that must be solved: (a) partner number, (b) identification of sexually accessible women, (c) identification of fertile women, and (d) minimal commitment and investment. Men who lack mechanisms such as a desire for a variety of partners, assessment of the degree of sexual accessibility, assessment of physical cues linked with fertility, and strategies for keeping time and investments to a minimum would have been out-reproduced by men who successfully solved these problems entailed by the pursuit of a short-term mating strategy.

Although women cannot benefit as much or as directly in reproduction from short-term mating, women can potentially reap a host of adaptive benefits: (a) immediate resources for themselves and children; (b) mate insurance should her regular mate become injured, die, or defect from the relationship; and (c) genetic benefits through mating with superior men. Because it is clear that women engage in short-term mating, and likely have done so throughout human evolutionary history, it is unlikely that they would have done so in the absence of benefits. The hypothesized benefits constitute some main advantages to women of a short-term mating strategy.

Task analysis of long-term mating suggests a different set of problems that must be solved: (a) identifying reproductively valuable women, (b) ensuring increased probability of paternity, and (c) identifying women with good parenting skills. Men who failed to solve these problems, for example, by being cuckolded and investing unwittingly in the offspring of other men, would have been replaced over evolutionary time by men

who successfully solved these adaptive problems.

Women pursuing a long-term sexual strategy would benefit from solving the following problems: (a) identifying men who have the ability to acquire resources, (b) identifying men who display a willingness to invest those resources in them and their children, (c) identifying men willing to commit to a long-term relationship, (d) identifying men willing to protect them and their children from aggressive members of the same species, and (e) identifying men with good parenting skills. Women, in this analysis, are predicted to place a greater premium than men on a potential mate's external resources, as well as the cues to such resources such as status, older age, ambition, and industriousness. Furthermore, women are predicted to shun men who emit cues that signal that they are pursuing a short-term, rather than long-term, mating strategy.

Different contexts trigger which strategy, or combination of strategies, is pursued. Although exploration of these contexts has just begun, a few promising lines have already been identified. Men who are physically attractive to women, for example, should be more successful at pursuing a short-term mating strategy. Women whose husbands fail at resource provisioning, or are more likely to die or defect, are predicted to pursue extra-pair matings. Often, both sexes pursue a mixed mating strategy, with one long-term relationship and short-term liaisons in contexts where the costs are low (e.g., in discovery or reputational damage) and the benefits high.

Empirical Support for Sexual Strategies Theory

Empirical support for Sexual Strategies Theory comes from a variety of sources—expressed preferences, observational data, physiological studies, demographic statistics, and laboratory tests. Furthermore, extensive cross-cultural evidence has been gathered to test the theory.

Desire for sexual variety. When asked how many sex partners one desires within the next month, year, decade, or lifetime, men and women differ in ways precisely as predicted by the theory (Buss & Schmitt, 1993). Over the next two years, for example, men state that they desire eight sex partners, whereas women report that they desire approximately one. Over the course of a lifetime, men report desiring 18 sex partners; women, 4 or 5. At each time interval, the sex differences are large, with magnitude of effects ranging from .49 to .87 in standard deviation units.

If you meet someone of the opposite sex who you find attractive, what is the likelihood that you would consent to sexual intercourse after different lengths of time? At the five-year mark, both sexes agree that sex is likely. For each shorter time interval, however, men are significantly more inclined to consent to sex. At one week, for example, men are still positive about sex, but women are extremely negative, giving it close to a -3 on a scale of $+3$ (definitely yes) to -3 (definitely no). Averaged across all time intervals, the sexes differ in the positivity toward sex by $d = 1$, or a full standard deviation of difference (Buss & Schmitt, 1993).

These sex differences emerge in behavioral data as well. In one study, men and women were approached by attractive confederates of the opposite sex and asked whether they would go out on a date that night, go back to the confederate's apartment that night, or have sex with the confederate that night (Clark & Hatfield, 1989). Of the women approached by the male confederate, 50% agreed to a date, 6% agreed to go back to his apartment, and 0% agreed to have sex. Of the men approached by female confederates, 50% agreed to the date, 69% agreed to go back to her apartment, and 75% agreed to have sex with her. These findings have been replicated several times, using somewhat different experimental designs (Thiessen, 1994).

Sex differences in the desire for sexual variety show up in studies of sexual fantasy conducted in Japan, Great Britain, and the United States. In their sleep men are more likely than women to dream about sexual events. Men's sexual fantasies more often include strangers, multiple partners, and anonymous partners (Ellis & Symons, 1990). Most men report changing sexual partners during a single sexual fantasy, whereas women rarely report changing partners. Thirty-two percent of men, but only 8% of women, report having imagined sexual encounters with more than 1,000 different partners so far during their lifetime (Ellis & Symons, 1990).

Another psychological clue to men's strategy of casual sex comes from researchers who examined shifts in judgments of attractiveness over the course of an evening at a singles bar. In one study, 137 men and 80 women were approached at 9:00, 10:30, and midnight and asked to rate the attractiveness of members of the opposite sex in the bar using a 10-point scale (Gladue & Delaney, 1990). As closing time approached, men viewed women as increasingly attractive. Their judgments of attractiveness at 9:00 were 5.5, but by midnight they had increased to over 6.5. These shifts in perceptions of attractiveness near closing time occur even after statistically controlling for the amount of alcohol the men had consumed. Women's judgments of men's attractiveness also increased over time. But women's ratings overall of the male bar patrons were lower than men's ratings of women. Women at the bar rated the men as just below 5 at 9:00, increasing at midnight to only 5.5.

In a recent meta-analysis of the sexuality literature, Oliver and Hyde (1993) found that attitudes toward casual sex showed the second largest sex difference among all sexual variables examined. Indeed, the magnitude of this sex difference was only exceeded by masturbation frequency.

This brief review does not do justice to the hundreds of studies that

support the hypothesis that men have a greater desire for a variety of sex partners. Studies of sexual fantasy, the relaxation of standards, the inclination to seek intercourse after little time has elapsed, shifts in judgments of attractiveness near closing time, and patronage of prostitutes all point to the same conclusion.

Long-term mate preferences. In the most massive study of its kind, long-term mate preferences were examined in 37 cultures located on 6 continents and 5 islands, with a total sample of 10,047 participants (Buss, 1989a). Across all cultures, men placed a greater premium than women on only two characteristics—physical attractiveness and youth, both known cues to a woman's fertility and reproductive value (see Gangestad & Thornhill, 1994; Singh, 1993; Symons, 1995).

Women were nearly universal in their expression of a stronger desire for men with good financial prospects, as well as the cues that lead to resources, such as ambition, industriousness, and social status. Furthermore, women universally desired long-term mates who were older than they were, another established cue to the acquisition of resources.

For most mate characteristics, the sexes showed no differences in desire. Both equally desired mates who were kind, intelligent, dependable, and healthy. The sexes differed only in the narrow pockets where they have faced different adaptive problems over human evolutionary history—pockets predicted in advance by Sexual Strategies Theory.

Temporal shifts in mate preferences. Mate preferences shift across temporal contexts in several ways predicted by Sexual Strategies Theory (Buss & Schmitt, 1993). Whereas in the long-term mating context men place a premium on sexual fidelity and abhor promiscuity in a woman (solutions to the problem of uncertainty about paternity), the reverse is true in a short-term mating context, in which men are indifferent to the sexual fidelity of a partner and

even slightly desire a partner who is promiscuous (possibly a cue to sexual accessibility). Also in the short term, men elevate the importance they attach to sex appeal and sexual experience, compared with the long-term context.

Women also shift their preferences across temporal context. In the long term, women value cues to long-term provisioning, such as a man's promising career, likelihood of professional success, and financial prospects. Women also dislike men in this context who lack ambition, are financially poor, and are uneducated.

In the short term, however, women place a greater value on immediate resources rather than future prospects. Women desire men who spend a lot of money on them immediately, give them gifts early, and have an extravagant lifestyle. They strongly dislike men who are stingy early in a relationship. Finally, women seeking short-term mates elevate the importance they attach to a man's physical attractiveness, providing circumstantial support for the "good genes" hypothesis articulated by Gangestad and Thornhill (1994).

Taken together, these studies support the aspect of the Sexual Strategies Theory that suggests that both sexes have both short-term and long-term strategies in their mating repertoire. Preferences shift according to temporal context in ways that appear to facilitate solutions to the problems that need to be solved for the successful pursuit of each strategy.

Sexual jealousy. A review of the large empirical literature on jealousy reveals few sex differences. On global measures of jealousy, such as how frequently one gets jealous or how intensely jealousy is felt, men and women score essentially the same. Evolutionary psychologists, however, long predicted that men and women might differ in the weighting given to the triggers of jealousy. Specifically, men over human evolutionary history have faced an adaptive problem not confronted by women—the problem of paternity uncer-

tainty (Daly, Wilson, & Weghorst, 1982; Symons, 1979). Because a sexual infidelity by a man's partner would have been the sole threat to his paternity, men's jealousy has been predicted to focus intensely on cues to sexual infidelity. Men whose long-term partners were sexually unfaithful would have risked, from a reproductive perspective, all of their mating effort, including the costs of attraction and courtship; all of their investment in the relationship; all of their partner's parental effort, which could get redirected toward another man's gametes; and all of their own parental effort, which also would have been redirected toward the offspring of another man.

From an ancestral woman's perspective, a sexual infidelity on the part of her mate would not, in itself, jeopardize her certainty that she was the mother. Maternity certainty is 100%. But such an infidelity could be extremely costly for the woman, because she would risk the loss of her mate's time, energy, commitments, resources, and parental investments, all of which could get channeled to a rival woman and her children. For these reasons, evolutionary psychologists had predicted that men's jealousy should be strong, obligate (in long-term investing relationships), and triggered heavily by cues to sexual infidelity. In contrast, women's jealousy is predicted to be more variable with culture and context and more heavily focused on cues to the long-term diversion of commitments, such as a man's emotional involvement with another woman.

Sexual and emotional infidelity, of course, are correlated events in everyday life, and therefore one provides a cue to the other. Both sexes are predicted to get upset by both forms of infidelity, and research suggests that they do (Buss, Larsen, Westen, & Semmelroth, 1992). Nonetheless, when given a choice, men are predicted to be more upset by a sexual infidelity than women, and women more upset by an emotional infidelity than men.

This predicted sex difference has accrued a large body of supporting empirical evidence. When given a forced choice about what would upset or distress them more, a sexual infidelity or an emotional infidelity, the overwhelming majority of women indicate that an emotional infidelity would be more upsetting (Buss et al., 1992). Men are more evenly split, but compared with women, show a far greater tendency to endorse the sexual infidelity as more upsetting.

These sex differences have been replicated using physiological techniques (Buss et al., 1992). In response to imagining a partner having sexual intercourse with someone else, men get more physiologically distressed than women—their heartbeat increases nearly five beats per minute, similar to the effect of drinking three cups of strong coffee at one time; they start sweating; and the corrugator muscle on the forehead contracts intensely, signally a frown or negative affect.

The sex differences have also been replicated by different investigators (e.g., Wiederman & Allgeier, 1993). They have been replicated in different cultures, such as Germany, the Netherlands, and Korea (Buunk, Angleitner, Oubaid, & Buss, in press).

Some investigators have raised the possibility that the sex difference is merely an artifact of the differing imagined conditional probabilities of the two events, with men believing that sexual infidelity implies emotional infidelity more than vice versa, and women believing that emotional infidelity implies sexual infidelity more than vice versa (e.g., DeSteno & Salovey, in press). Nonetheless, a series of empirical studies has failed to confirm this alternative explanation (Buss, Kirkpatrick, Shackelford, & Bennett, 1996). Two methods were used to control for the correlated nature of the infidelity types. First, the infidelity types were rendered mutually exclusive (e.g., imagine your partner having sexual intercourse with someone else, but there is no chance of any emotional involvement).

A second methodological strategy entailed asking participants to imagine that both forms of infidelity have occurred and to indicate *which aspect* was more upsetting. The results were conclusive: The sex differences remained just as robust using these methodological controls.

At this point, the hypothesized sex differences in jealousy have survived many methodological and conceptual hurdles. They have been replicated extensively, show up physiologically, emerge cross-culturally, and emerge even when stringent controls are applied to eliminate different conditional probabilities.

Sexual conflict. A major component of Sexual Strategies Theory involves predictions about the domains in which men and women will experience conflict. Specifically, it predicts that conflict results from strategic interference—when one person's sexual strategy interferes with the successful pursuit of another person's sexual strategy (Buss, 1989b). Although there are many domains in which strategic interference will occur, two will be highlighted here—sexual aggression and sexual withholding.

Two specific predictions about strategic interference can be derived from the fundamental differences in mating strategies pursued by the sexes: (a) Women will be more upset and angered by features of men's strategy that interfere with their own, such as the male tendency toward greater sexual assertiveness or aggressiveness—initiating sexual advances sooner, more frequently, more persistently, more aggressively, or with more partners than women; (b) men, in contrast, will be upset and angered by features of women's mating strategies that conflict with their own, such as those involving selectively withholding or delaying consummation opportunities—declining to have sex, desiring it less frequently, or requiring more stringent external conditions to be met prior to consummation.

Empirical evidence on judgments about the magnitude of anger and

upset men and women experience support these predictions (Buss, 1989b). Both sexes judge that women will get significantly more upset by acts of sexual aggression, such as trying to force sex acts, demanding sexual relations, and touching the body without permission. Both sexes also judged that men would be more upset by a partner's acts of sexual withholding, such as refusing to have sex, saying "no" about having sex, being a tease sexually, and being led on and then turned off.

In another study, newlywed men complained more than newlywed women about their spouses being sexually withholding (Buss, 1989b). Newlywed women complained more than newlywed men about sexually aggressive acts such as touching bodies without their permission. Complaints about these forms of strategic interference showed sex-linked correlations with ratings of sexual dissatisfaction. Specifically, the single strongest correlate of sexual dissatisfaction for men was a partner being sexually withholding ($r = .37, p < .001$), and the largest correlate of sexual dissatisfaction of women was a partner being sexually aggressive ($r = .36, p < .001$). In contrast, a partner's sexual aggressiveness was unrelated to men's sexual dissatisfaction, and a partner's sexual withholding was unrelated to women's sexual dissatisfaction.

In short, sexual aggression is more upsetting to women than to men, is more often experienced by women than by men, and when experienced, is more often linked with sexual dissatisfaction in women than in men. Sexual withholding is more upsetting to men than to women, is more often experienced by men than by women, and when experienced, is more often linked with sexual dissatisfaction in men than in women. Each sex appears to be especially attuned to events that interfere with a preferred sexual strategy.

This brief summary does not do full justice to the array of research on other aspects of Sexual Strategies

Theory. Research has supported predictions about sex differences in the tactics used to attract mates (Buss, 1988a; Schmitt & Buss, 1996), tactics used to derogate competitors (Buss & Dedden, 1990; Schmitt & Buss, in press), tactics used to retain mates (Buss, 1988b), and causes of conjugal dissolution (Betzig, 1989). Taken together, the corpus of research using data sources widely varying from expressed preferences to physiological recordings to actual marriage patterns suggests considerable support for many key premises of Sexual Strategies Theory.

Evaluation and Critique of Sexual Strategies Theory

This final section provides an evaluation of Sexual Strategies Theory on several dimensions, such as testability and parsimony, areas of weakness, and the future research agenda for the theory.

Testability and predictive utility. A common misperception of evolutionary hypotheses is that they are untestable speculations, more fit for cocktail conversation than for the rigors of scientific scrutiny. As documented in this article and the empirical publications cited, it is obvious that the theory is testable and in fact has survived numerous empirical hurdles using methodologies as diverse as self-report and physiological recording devices. The predicted sex differences in jealousy, for example, have been found using self-report, physiological methods, and public documents recording the reasons for divorce, and they have been replicated in diverse cultures such as Korea, Japan, Germany, and the Netherlands. The predicted sex differences in mate preferences, to take another example, have been found using expressed preferences in 37 cultures and records of personal ads in several cultures and are implied by the sex differences in the success of tactics of mate attraction and mate retention. Few hypotheses in the social sciences have withstood this number of diverse empirical tests, so claims that

evolutionary hypotheses are untestable are simply not warranted.

Although the theory has survived many empirical tests, from another perspective there remain many empirical tests ahead. Here is a sampling of additional testable hypotheses, all derived from Sexual Strategies Theory, that thus far have not been subject to empirical tests:

(a) Women whose partners lose their jobs, or whose partners suffer a decrement in resources provided to the mate, will be more likely to seek extramarital affairs and divorce because these events violate their desires in a long-term mate.

(b) Men will experience more sexual jealousy when the rival possesses better job prospects or financial success.

(c) Women will experience more sexual jealousy when the rival is more facially attractive, is significantly younger, or has a more attractive body (e.g., a lower waist-to-hip ratio; Singh, 1993).

(d) Men will more easily forgive a partner who is emotionally unfaithful than one who is sexually unfaithful; women will more easily forgive a partner who is sexually unfaithful than one who is emotionally unfaithful.

(e) Intra-individual variations in self-esteem will be sex linked, such that elevations or declines in the embodiment of qualities desired by the opposite sex will cause sex-linked elevations and declines in self-esteem.

(f) When divorce occurs because of a widening mate-value discrepancy, the higher mate-value person will replace the mate with a partner who fulfills sex-linked desires in a mate, such as a younger or more physically attractive partner in the case of a man with higher mate value and a more financially secure partner in the case of a woman with higher mate value.

Dozens more predictions have been made, all stemming from the basic premises of Sexual Strategies Theory (Buss, 1994; Buss & Schmitt, 1993). The theory is eminently testable,

has survived several rounds of empirical hurdles, and is highly generative of further testable hypotheses.

Parsimony and internal consistency. Parsimony is often held as a useful criterion for evaluating theories, and so it is under certain contexts. It is often equated with making few assumptions or having a few basic theoretical principles account for a large number of phenomena. On this criterion, Sexual Strategies Theory is quite parsimonious. Desire is postulated to lie at the foundation of the mating system, and from desire flows a plethora of predictions about other aspects of mating—tactics of attraction, the content of derogation of competitors, the success of particular mate-retention tactics, the causes of conjugal dissolution, and many others. There are no internal inconsistencies within the theory.

Sometimes parsimony is applied in a different sense of the term to refer to the number of mechanisms postulated, in this case psychological mechanisms. Because sexual strategies theorists postulate many evolved psychological mechanisms, wouldn't it be more parsimonious to postulate a smaller number of more domain-general mechanisms? This certainly has been the stance of most mainstream psychologists in this century, but I argue that it is wrong. A theory needs to explain as many entities as exist within the domain of the theory. A human anatomist or physiologist would not be criticized for postulating so many different bodily mechanisms—heart, lungs, liver, larynx, kidney, tongue, teeth, toes, and so on. If there are many mechanisms in the body, each specialized and serving a different function, then there is nothing unparsimonious about having many mechanisms in one's model of the body. If selection has fashioned an analogously large number of *psychological* mechanisms, then there is nothing unparsimonious about having many mechanisms in one's model of the mind.

Parsimony most properly applies to the number of theoretical processes

needed to explain a particular set of phenomena, not to the number of phenomena that require explanation. In this sense, the evolutionary perspective generally, and Sexual Strategies Theory specifically, are parsimonious and internally consistent.

Level of empirical support. Evolutionary psychological hypotheses typically postulate evolved species-typical or sex-typical psychological mechanisms. Manifest behavior is predicted to be highly variable within the same individual across different situations, different individuals, and even cultures. Much variability is predicted to stem from environmental variability. The same individual, for example, confronts different adaptive problems over time and context, and so some mechanisms are activated and others lie dormant in each, giving rise to variable behavior. The same principle applies to different individuals, who confront different adaptive problems, and even entire cultures, which recurrently confront some adaptive problems more than other cultures do. A critical empirical test of evolutionary hypotheses, therefore, is not whether manifest behavior is universal (it is not predicted to be), but rather whether the underlying psychological mechanisms are universal, species typical, or sex typical. Actually, nearly all psychological theories are based on the assumption, usually implicit, of the existence of universal mechanisms; evolutionary psychology stands out in being explicit about this assumption.

Without empirical evidence for universal sex differences in sexual psychology, many tenets of Sexual Strategies Theory would collapse. Fortunately, the empirical base is secure in some fundamental domains. The predicted sex differences in mate preferences, for example, have been documented in 37 different cultures (Buss, 1989a) and have been replicated in many others (see Buss, 1994, for summaries). The sex difference in desire for sexual variety also appears to be soundly documented

across cultures (Buss, 1994; Symons, 1979). Although less extensively documented than these, sex differences in jealousy and causes of conjugal dissolution are acquiring a strong cross-cultural foundation (Betzig, 1989; Buunk et al., in press).

Much empirical work remains to be done, however. In particular, we need more detailed and refined task analyses of precisely what it takes to solve each adaptive problem. Furthermore, the output of the evolved mechanisms has been relatively neglected. Sexual jealousy, for example, can result in behavior ranging from vigilance to violence (Buss, 1988b). We need to know the different behavioral output of each evolved psychological mechanism and the causal conditions under which different behaviors are produced. Does jealousy result in increasingly violent behavioral output as the discrepancy in mate value between the partners increases? Does acting upon a desire for sexual variety depend on the magnitude of residual reproductive value? These and dozens of other questions await empirical research. In this sense, although the empirical foundation for Sexual Strategies Theory is solid, the bulk of empirical work lies ahead.

Current weakness. Several key weaknesses of evolutionary psychology generally, and Sexual Strategies Theory specifically, can be highlighted. First, we lack a videotape of the selective pressures that have affected human sexual psychology over evolutionary time. Did concealed ovulation precede the emergence of long-term mating and high male parental investment, or did these three features of humans co-evolve simultaneously? Some selection pressures can be inferred from the paleontological evidence, comparative analysis, and analysis of the current design of our mechanisms. Indeed, the design of our current mechanisms constitutes a record of past selection. Nonetheless, reconstructing the evolutionary history of prior selection remains a daunting task. We may eventually

confront the possibility that we will never know precisely the selective events that sent our species careening in the directions it did.

Second, there is currently uncertainty about how best to characterize evolved psychological mechanisms and a lack of deep knowledge about any particular psychological mechanism. Some evolutionary theorists describe psychological mechanisms as information-processing devices designed to take in certain classes of input, operate on that input with decision rules, and produce output in the form of manifest behavior, physiological activity, or information to other psychological mechanisms (Buss, 1995; Tooby & Cosmides, 1992). At the current time, however, no evolved mechanism has been fully described in these terms. Compared to our knowledge about evolved physiological mechanisms such as the liver, our knowledge of evolved psychological mechanisms is paltry.

A third limitation is a predictive one. Detailed analysis of the tasks that are solved to reach an adaptive problem enable one to identify what is necessary for a successful solution, but there is no way to identify in advance which solution among the possible set of solutions has evolved, or even if a successful solution has evolved at all! Knowing that warm-blooded animals must have evolved mechanisms to solve the problem of thermal homeostatic regulation, for example, does not allow us to predict whether an organism will have evolved sweat glands, adjustable feathers to control body temperature, or evaporative mechanisms on a protruding tongue. Similarly, knowing that men have faced the adaptive problem of uncertainty in paternity does not tell us which among the many possible solutions will have evolved. Indeed, different species have evolved many qualitatively different solutions to this problem, including sperm plugs, building a "fence" around the female, threatening intrasexual rivals, emitting "antiaphrodisiac" scents, sequestering the

female, and many others (Buss, 1994). In short, knowledge about an adaptive problem does not necessarily yield precise predictions about which among the possible set of solutions will have evolved.

A fourth limitation is that Sexual Strategies Theory has been far more successful at predicting and explaining sex differences in human sexuality than it has been in explaining the features of sexuality men and women have in common. Furthermore, it has been even less successful in explaining individual differences in human sexuality, although there have been several successful inroads to this limitation (e.g., Gangestad & Thornhill, 1994). Hopefully, future developments of Sexual Strategies Theory will afford greater insights about our shared sexual psychology as well as into the ways in which we differ within sex.

Multi-level conceptual integration. Scientific progress is often usefully gauged by the degree to which a discipline achieves conceptual integration—the notion that conceptual schemes in one discipline are made mutually consistent with what is known in other disciplines (Cosmides, Tooby, & Barkow, 1992). This is not reductionism, but conceptual integration. The laws of chemistry, for example, cannot contradict the laws of physics—the two sets of laws must be mutually compatible, even though one cannot be reduced to the other. Similar forms of conceptual integration should apply with equal force to psychology and evolutionary biology. Models of psychology must be consistent with what is known about the principles of evolutionary biology, even though one cannot be reduced to the other. In short, multi-level conceptual integration remains a worthy goal of all scientific enterprises.

Evolutionary psychology generally, and Sexual Strategies Theory specifically, represent steps toward this goal. As far as we know, evolution by selection remains the only known causal process capable of creative complex functional organic mecha-

nisms. The human mind and the 1,400-cubic centimeter brain in which it is housed represent one of evolution's most formidable creations. Theories of sexual psychology that are inconsistent with what is known about evolutionary biology stand little chance of being correct.

Evolution by selection strongly suggests, for example, that when males and females face recurrently different adaptive problems over the deep expanse of evolutionary time, they will evolve different adaptive solutions. Given what is known about the nature of these different adaptive problems in the domain of human sexuality—such as the problem of uncertainty of parenthood confronted by men, but not by women—the odds that men and women would be identical in their sexual psychology is essentially zero (Symons, 1992). Thus, theorists who assume implicitly or explicitly an identical sexual psychology for men and women, as some do, are unlikely to be correct. Sexual Strategies Theory is thus compatible with this principle of evolutionary biology—sex differences are only predicted in those adaptive domains in which the sexes have faced recurrently different problems over human evolutionary history.

Narrow training, disciplinary isolationism, disciplinary territoriality, and xenophobia often prevent the realization of insights in one discipline that can be gleaned from understanding the basic principles in disciplines operating at different conceptual planes. Sexual Strategies Theory represents a step toward multi-level conceptual integration of evolutionary biology and the psychology of human sexuality.

Conclusions

The scientific revolution started by Darwin more than a century ago is finally being realized in the scientific study of human sexuality. The tenets of sexual selection theory combined with insights from evolutionary psychology form the foundation of Sexual Strategies Theory—a

theory designed to explain the sexual psychology of men and women worldwide. Human sexual psychology, in this account, represents a rich repertoire of short-term and long-term mating strategies, each activated by specific social and sexual contexts.

Desire, in this account, lies at the foundation of the human mating system. Human desires define to whom we are attracted, as well as which tactics of attraction are effective. Violations of desires define conflict between the sexes, when a strategy pursued by one interferes with a strategy pursued by the other. In extreme cases, violations of desires lead to conjugal dissolution. The flip side of the coin, however, is represented by the fulfillment of desire, which determines successful mate-retention tactics and harmony between the sexes.

The empirical foundation for Sexual Strategies Theory is solid and must be explained by any comprehensive theory of human sexuality and mating. Men and women differ universally in their desire for sexual variety. Men and women differ in the qualities they prefer in long-term mates. Men and women differ in the weighting given to cues that trigger sexual jealousy. Both sexes show temporal shifts in their desires as they move from long-term to short-term mating contexts. Theories premised on the notion that men and women are identical in their underlying sexual psychology do not square with this empirical foundation of sex differences.

Much conceptual and empirical work remains to be done, and in this sense, a foundation does not a house make. Conceptually, models are needed to explain sex differences in adaptive problems as yet unidentified. Task analyses and computational models are needed for the adaptive problems shared by men and women, as well as for those on which they differ. The range of behavioral output of the array of evolved psychological mechanisms is largely unexamined. Urgent work is needed on individual differences within sex, as well as on

the personal and social contexts that trigger specific elements from the complex strategic repertoire.

Even with these limitations, however, Sexual Strategies Theory provides the outlines of many fundamental adaptive problems men and women have faced in the sexual domain. It provides a compelling account of men's and women's sexual psychology as solutions to those problems. It has survived numerous empirical tests that have put it at risk of falsification. More than any other theory of human sexuality, it explains *why* men and women have evolved the complex repertoire of context-contingent short-term and long-term sexual strategies that characterize our species today.

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