

THE ENIGMA OF SEX AND EVOLUTION

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Abstract

A severe problem for evolution theory is to explain the evolution of sexual reproduction and behavior. The theories proposed include dual evolution, i.e., the sexes evolved separately but greatly influenced each other's evolution. Another major theory is sexual selection, a process by which organisms directly influence each other's evolution. The creationist model proposes that the sexes were designed to be physically and mentally compatible with each other, and for humans a harmonious physical and mental relationship will result if the couple live in harmony with the physical and mental constraints of this design.

Introduction

Evolutionary naturalism hypothesizes that life originally reproduced by a process of fission somewhat similar to how normal cells divide today. Life later evolved a more complex system of reproduction called asexual. This involved each animal or plant producing both eggs and sperm, so they could self-fertilize. Even later a yet more complex system of reproduction called **sexual dimorphism** evolved. This system required two physically distinct sexes, male and female, in order to produce offspring (Crook, 1972, pp. 233-235).

Sexual reproduction requires that the sperm, typically from the male, be transferred to the female in order to fertilize the eggs thus forming zygotes. Another method of sexual fertilization involves the male depositing sperm directly on the eggs previously laid by the female the technique used by many kinds of fish. Evolutionists have usually assumed that sexual reproduction evolved because it somehow facilitates survival in the Darwinian sense (Gibbons, 1991, pp. 957-958). Even our notion of physical sexual attraction and beauty, it is argued, must be adaptive in a Darwinian sense. A whole new science field has developed from this view which examines "beauty through the prism of Darwinism" (Concar, 1995, p. 40).

Evolution also must explain the many varieties of sexual dimorphism—a common example is the brightly colored feathers found in members of one sex and the dull color that commonly exists in members of the other sex. All of the many other sexual forms also must be explained by evolution. For example, among both ants and bees there exist two different kinds of females—the workers and the fertile queen—and also several kinds of males (Klotz, 1970, p. 184). A related concern is **sexual selection**, whereby potential mates are theorized to have produced the many sexual differences existing in nature. In most animals "males are predominant competitors for mates, but in a few species, females compete more intensely for mates" (Clutton-Brock and Parker, 1992, p. 438).

The Importance of the Origin of Sex

The issue of the origin of the X and Y chromosomes, the many physical and psychological sexual differences, plus the whole problem of sexual reproduction "represents the most important challenge to the modern theory of evolution" (Bell, 1982, book jacket). As Margulis and Sagan (1986, p.203) conclude, the origin of sex

involves "a large and varied set of different problems . . . not easily amenable to unitary mathematical treatment" Efforts to understand the phenomenon have failed to such a degree that

sex is the queen of problems in evolutionary biology. Perhaps no other natural phenomenon has aroused so much interest; certainly none has sowed as much confusion. The insights of Darwin and Mendel, which illuminate so many mysteries, have so far failed to shed more than a dim and wavering light on the central mystery of sexuality. . . . It seems that some of the most fundamental questions in evolutionary biology have scarcely ever been asked (Bell, 1982, p. 19).

In an attempt to respond to what Bell considered the failure of the leading researchers in this area, including George Williams, Michael Ghiselin, and John Maynard Smith, he completed a massive study while still

a member of the ecology group at McGill, and could not have chosen a better place [to do this research]. Since the group includes two convinced and (worse) logical anti-Darwinists I soon found that I could not get away with the deplorably loose reasoning of much evolutionary theory, and was forced to adopt a much more respectful attitude to facts and a much less respectful attitude to theories (Bell, 1982, p. 17).

Bell concluded that this subject is far more complex, and it is far more difficult to arrive at a theory that supports evolutionary naturalism than previous researchers had assumed (see Trivers, 1983 for an excellent review of Bell). This lack of knowledge has not prevented many biologists from justifying what many today believe are unacceptable conclusions, such as the inferiority of women doctrine which developed partly because evolutionary naturalism seemed to require it (Symons, 1980, pp. 21-28; Tanner and Zihlman, 1976, pp. 585-608).

The Putative Evolution of Sexual Dimorphism

The three major explanations for the evolution of sexual dimorphism are sexual selection, intraspecific niche divergence, and ecological competition (Shine, 1989, pp. 419-421). Its origin is an important question because major sexual dimorphism is universal in most animal phyla. Although admitting that the environment cannot be totally discounted, Fisher, following Darwin, tried to explain almost all physical and behavioral sexual dimorphism differences existing in the sexes as the

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result of sexual selection. This includes not only hunting skills and obvious secondary sexual characteristics, but also the high female voice and her ability to produce song which

like small body size, the higher female voice seemed childlike, unthreatening, more sexually attractive. If so, those who retain high pitch at puberty made more desirable mates. Darwin agrees. In *The Descent of Man* he says that the first females used their high voices as musical instruments and . . . we may infer that they first acquired musical powers in order to attract the other sex (Fisher, 1982, p. 97).

One might wonder just how critical a high voice is in sexual attraction, and why this would be valued. We today are used to the high voice of females, but overall it would seem to be a minor factor even in cultures that have come to value this trait. Fisher also concludes that sexual selection evolved males that were "good hunters and dependable providers . . . those that could get along with other males and had self-confident, alert, amiable, popular personalities . . . [and also] large, strong males must have been in demand, too, because men are on the average 20% larger than women—a sexual dimorphism apparent in humans around the world" (Fisher, 1982 p. 96). Others have argued that women are evolutionarily superior (Montagu, 1952; Tavis, 1992). Sexual reproduction still does not explain sexual dimorphism; and

another baffling and subtle problem [is]—if sex, why sexes? If recombination, the shuffling together of the genetic material of two individuals, is such a good thing, why has evolution not come up with a scheme which allows everyone to mate with everyone else? As we are limited in our choice of partners to those of a different sex, having just two sexes seems to be very inefficient. Nearly all organisms (with the exception of a few single-celled creatures which have up to six sexes) exist as just males and females. This means that only half the population is available as a potential mate (Jones, 1993, p. 88).

The Role of Sexual Selection in Evolution

One of the cornerstones of Darwinian evolution is *sexual selection*. This theory postulates that some evolution results partly from the hypothesized tendency of animals to preferentially select mates with certain traits. Selection thus favors the increase of certain traits, both those that the animal interprets as attractive and those which encourage mating. Applied to humans, the theory concludes that women with certain traits—slimness, certain nose shape, etc., would be more apt to be selected, thus a greater and greater percent of women with these traits would marry and consequently would pass them on to their offspring. The evidence for this factor is probably in general greatest among humans because we are, by far, the fussiest of all living creatures in mate selection (Reed, 1975, pp. 273-333). Yet, no direct evidence of any evolution of sexual traits due to sexual selection exists in human history (Kropotkin, 1972).

It was at one time hypothesized that men desire certain traits in women—the slender figure of certain

proportions is the most salient of these—and men thus were more likely to marry those women with these traits. Yet weight, especially in western females, is far more of a problem today than ever before, and no evidence exists that the genetic factors that affect size and body proportions of women have changed significantly since before 2,000 BC when useful data is available. Whatever changes have occurred are due to cultural and diet changes.

Many animals show primarily a mate selection preference for their own species, and many show even less sexual selection. Among humans, about 95% of all people in Western society eventually marry by age 50 (U.S. Bureau of Census, 1995) and of those who do not, many have children (and many more at least attempt to) in their lifetime. Further, many of those who do not marry are involved in religious orders, occupations or pursuits such as the military, all of which select on the basis of desirable physical and mental characteristics, including health, intelligence and integrity. Some of the most unlikely candidates marry and father children. Many of the more desirable women enter careers such as modeling, or marry into the higher socioeconomic status and for various reasons give birth to fewer children than average (Fisher, 1979, pp. 219-224). A negative correlation for this reason tends to exist when family size is compared with educational level, socioeconomic status, intelligence, and occupational prestige.

Although sexual selection is evidently more powerful among humans than almost all animals, we show little evidence of it. In Jones' (1993, p. 92) words "There is little evidence (in spite of much prurient speculation about beards, breasts and buttocks) that humans have attributes of this kind" because of sexual selection. In addition, sexual selection based on a preference for attractive mates would serve to *reduce* physical differences among humankind.

Even though Darwin's theory of sexual selection was a major cornerstone of his evolution theory, many well known scientists have never accepted it. Rice (1925, p. 245) states, "sexual selection is relegated by many to the rank of a somewhat doubtful hypothesis rather than theory." Smith (1978, pp. 2-18) even concludes that Darwin's sexual selection idea now receives *little* attention from contemporary biologists. He also claims that in *no case* has it been scientifically demonstrated that such selection in wild populations has significantly changed an animal. This is not surprising, since it would be necessary to show not only that the females selected some kinds of males in preference to others, but also as a result of so choosing, certain females on the average produced a larger number of offspring.

A far better case exists for the argument that sexual selection functions as a means of *reducing* the number of unfit, the deformed and the clear "monsters," of the species. Some sexual selection does occur, but an argument exists that sexual selection at most reduces *disgenics* or *de-evolution*. This is partly because most young, healthy animals of the same species look much the same. Other than the owner and close associates, most observers have a difficult time distinguishing one adult German Shepherd from another. Aside from certain neutral identifying spots on their fur and hair color variations, they are largely identical. More physical

trait variation exists in humans than in most animals, and most animals are far less fussy in mate selection than humans (Allee, 1938; Williams, 1977, pp. 124-134). Many animals, both tame and wild, regularly try to mate with a wide variety of animals with which they cannot produce offspring (Smith, 1978). Dogs often try to mate with a wide variety of dogs, even those that seem unlikely candidates. In Williams's (1974, pp. 184-185) words, "The greater promiscuity of the male and greater caution and discrimination of the female is found in animals generally."

Although sexual selection "is an important component in the mating system of a variety of species," it can select only for traits that exist and for which it is programmed to select (McLennan and Brooks, 1991, p. 255). Selection cannot occur without the inborn preference for certain traits, and both the traits selected for and the behavioral mechanism that does the selecting are evidence of design. The evidence is that sexual selection primarily only fine tunes, or reduces de-evolution. Hundreds of examples of this exist (Bergman, 1993, pp. 93-106).

Sexual selection, as does natural selection, therefore probably plays largely a *conservative* role in evolution. Numerous studies have found that animals which deviate in a significant way from the norm are more likely to be weeded out (Ambrose, 1982). The origin of the behavioral component called **sexual drive** is critical in sexual selection. For example, Cambridge University zoologist, Charles Goodhart claims that humanity "lost" its fur coat and became a "naked ape" before the start of the last ice age between 70 and 120 thousand years ago (1993, p. 4). He concludes that this occurred because of sexual selection in spite of the temperature changes which would select for a fur coat. Specifically, males came to prefer hairless women. Consequently, he argues, the trait of hairlessness was selected for both sexes. He adds that even today men prefer women lacking beards, mustaches, or excessive body hair. Goodhart cannot explain how these pre-humans, the most evolved form of life then, were so successful at reproducing and yet males somehow developed a preference for hairless females. He adds that hairlessness was a very rare trait then and a preference that did not exist among any other mammals including primates.

How this behavioral preference developed cannot be explained, a problem because this change supposedly occurred *before* the ice age when a thick coat of hair would be critically important for survival. Presumably the behavioral preference for hairlessness developed because of sexual selection—yet this preference would be selected *against* by the coming ice age. Also our hypothetical ancestors are universally regarded as extremely hairy, and for this reason those with the sexual drive for hairy females would be more likely to reproduce; thus this drive would be selected.

Presumably a loss mutation caused the disappearance of most of the body hair, and hairless apes were more sexually attractive, thus disproportionally were selected. Why this preference developed cannot be explained, especially since we see no evidence that any primate prefers hairlessness. The opposite extreme in human hair growth called **hirsute** is well known. This entire scenario is highly speculative and totally lacks empirical support. It is a post-hoc scenario that tries to

explain the uniqueness of humans in contrast to all other primates.

Numerous studies have found that the sexual selection that does occur is strongly related to the health of the animal selected. Consequently, the healthy are far more apt to be selected (McLennan and Brooks, 1991, pp. 255-286). This is often true even regarding minor morphological deviations. One example is the research that found male Japanese scorpion flies with the most symmetrical wings won the most mates (Concar, 1995, pp. 40-44). As another example Mollen found he could "ruin male swallows' chances of finding mates merely by making their tails less symmetric" (Concar, 1995, p. 41). Research with humans has found the most desirable traits are generally an average of existing traits. When the faces of women were computer averaged, the composite was judged more attractive by a group of adults than any of the persons in the individual pictures. And the more faces used in making the computer image, the more appealing it was judged by adult judges (Jones, 1993, p. 95).

Ramifications of the Origins of Sex Question

The origins of sex question is important because it has critical implications for behavior standards and social policy. An example is Wright's conclusion that evolution has shaped our genes so that "it is to a man's evolutionary advantage to sow his seeds far and wide" and that women should seek mates with "the best genes and the most to invest in offspring" (Wright, 1994, p. 45). In other words, Wright argues that evolution would select for promiscuity in males because this behavioral trait would enable them to produce more offspring—and consequently it would be more likely that these genes would be passed on.

The reasoning is, if a mutation occurs which enables a male to be more sexually aggressive and promiscuous, this gene then would be positively differentially selected. Males who are sexually aggressive and promiscuous are more apt to leave offspring, thus are more likely to pass that gene on to their greater number of offspring. Conversely, it is to a woman's benefit, he argues, to seek a mate who is going to provide security and will insure that the children she has are more likely to survive. Evolution would for this reason select for those traits. This common scenario is frequently presented in both the scholarly and the popular literature.

Little historical or empirical evidence exists for this position, and the same reasoning that applies to men *also* could apply to women. Women who are highly promiscuous are also likely to have more offspring, thus are more likely to pass on their promiscuous genes. On the other hand, the analogy used to explain women's lack of sexual aggression and promiscuity could also be applied to men, i.e., a man who seeks a woman who is able to bear and properly raise his children will have offspring that are more likely to survive to pass on his genetic desire for a woman who is able to bear and effectively raise his children (Reed, 1975). The evolutionary theory seems more a post-hoc explanation to justify irresponsible male behavior and a dual sexual standard (Kevles, 1986; Hubbard, 1979; Morgan, 1972; Borgese, 1963). Darwin originally argued along those lines, specifically concluding that males usually have

larger bodies due to an advantage for male to male combat for females (Shine, 1989, pp. 419-461). Many of the conclusions about humans come from observing animals, a practice that is fraught with difficulties:

The Nobel Prize-winning behaviorist Konrad Lorenz saw humans as “killer apes” anxious to pass on our own genes by murdering the opposition, which may have explained his own early flirtation with the Nazis; and any decent airport has a row of paperbacks whose embossed covers purport to explain human nature as emerging from a history as primates with one or other sexual and social preference (Jones, 1993, p. 91).

The major problem with sexual selection is that natural selection would select against sexual selection. Mates who are choosy about their mates are less likely to mate, and less likely to pass on their traits to their offspring. Sexual selection would select for those who do not discriminate on the basis of irrelevant physical traits—and those who do not discriminate at all are far more apt to leave offspring. Clearly, sexual selection would favor those individuals who are not sexually selective, a major factor which would work against sexual selection.

The Evolution of Sex from Asexual Reproduction

The lack of evidence of any biological systems that can bridge the chasm between sexual and asexual reproduction either today or in the past is also a major difficulty with evolution theory. Actually, the complete lack of any transitional forms for all sexual traits is a huge major fossil gap. The same problem also exists here as with any transitional form: structures are useless or worse until they are at least marginally functional. This is *especially* true regarding reproduction, and would result in rapid extinction if the features produced by mutations were less than fully functional (Hrdy, 1981, pp. 25 and 150).

The complete lack of transitional forms bridging asexual cellular fission from the more complex asexual and sexual reproduction is not explained but confounded by the fact that some plants and simple animals can reproduce *both* sexually and asexually. The forms of life that can reproduce effectively by *either* system are not in any sense intermediate but are comparable to an animal with equally effective gills and lungs. To be able effectively to reproduce *both* sexually and asexually would confer upon the organism an enormous evolutionary advantage: its genes could be passed on *regardless* of whether a mate was available. Indeed, considering that a key to evolution is reproduction efficiency and high numbers of offspring, evolutionary naturalism would predict the development of *both* highly developed sexual and asexual reproductive systems in the same plant or animal.

The History of the Problem of the Origin of Sex

Darwin also recognized the origin of sex problem as a major difficulty for evolutionary naturalism. In spite of 100 years of research, the problem is more serious today because of our vastly greater knowledge about the enormous complexity of sexual behavior and physiology. In Williams' (1977, p. 124) words “the masculine-feminine contrast is a *prima facie* difficulty

for evolutionary theory.” His is a far more honest appraisal than the usually simplistic theories based on hypothetical natural selection events. While these events may function to reduce de-evolution, the claim that natural selection is the *creator* is a claim plagued with major problems.

Evolution requires sexual reproduction to have evolved from asexual reproduction via natural selection; thus, this more evolved reproductive method must confer clear evolutionary advantages. Researchers must, therefore, accept this conclusion *a priori* and attempt to defend it, no easy matter as researchers in the field have conceded. The enormous disagreement in the field also shows just how tenuous are the conclusions used to support the assumptions of sexual evolution (Sherfey, 1973). Williams conceded that comparing the parthenogenetic reproduction of diploid eggs of the parental genotype to the genetically diverse haploid eggs that require fertilization reveals “that the parthenogenetic individual has twice the fitness of the sexual” (Williams, 1977, p. 8). He concluded that “this immediate advantage of asexual reproduction is generally conceded by all those who seriously concerned themselves with the problem” (Williams, 1977, p. 8).

Evolution theory argues that sexual reproduction was selected because it produces offspring of greater variety, thus allowing future evolution forces more from which to select (Sheppard, 1963). Greater variety is a goal which is admittedly critical or life. This fact, though, does not explain the origin of sex, especially the severe problem of how animals were able to reproduce before the evolution of the many complex physiological and psychological mechanisms which cause sexual behavior. Field studies, especially on organisms that reproduce both sexually and asexually, have found that “they usually reproduce asexually, but use sexual reproduction in special situations . . . sex is an adaptation to special situations” (Williams, 1977, p. 3). In other words, evolution does not select for sexual behavior as opposed to asexual, but sexual reproduction is a mechanism with certain advantages in some situations.

A comparable example are the human hands which are capable of accomplishing complex tasks like painting, drawing, or writing. They are critical in certain situations and tasks, yet the feet are commonly used for other tasks and are enormously superior for certain things, such as locomotion. The evolutionary trend is not to lose feet and evolve hands because hands have a clear advantage in some situations, but both are useful. Likewise, both sexual and asexual reproduction are an important part of the overall functioning and survival of life.

Actually, comparisons between asexual and sexual reveal that asexual reproduction is in many ways superior from an evolutionary standpoint. Asexual reproduction produces both a larger initial offspring number and more sets of offspring than sexual, whose offspring are few in number and typically produced only once a season. To balance this loss, the mortality rate is often high for asexual reproduction and low for sexual reproduction. The offspring from asexual reproduction also typically develops and matures rapidly after birth. Especially the higher forms of sexual development also often require the organism to progress through

more or longer developmental stages (Williams, 1974, pp. 87-91; 1977, pp. 57-60).

Since asexual reproduction also has the advantage of producing far more offspring, it may provide evolution much more to select from compared to sexual. Further, the offspring are far less vulnerable because they skip or rapidly progress through the infant or larval stages when animals are usually poorly able to defend themselves. The brief reproduction period and few offspring for sexual reproduction produces such clear disadvantages that Bonner (1958, p. 193) seriously asked "what use is sex" to evolution, and consequently why would it evolve? Researchers have, for these reasons, struggled to delineate why natural selection would evolve sexual behavior in view of the fact that asexual reproduction seems to be far more advantageous from an evolutionary standpoint. Jones claims that sex exists because:

... if a sexless organism has a harmful change to the DNA, it will be carried by all her descendants. None of them can ever get rid of it, however destructive it might be, unless it is reversed by another change in the same gene—which is unlikely to happen. In time, another damaging error will occur in a different gene in the family line. A decay of the genetic message will set in as one generation succeeds another, just like the decay that takes place within our aging bodies as our cells divide without benefit of sex. In a sexual creature the new mutation can be purged as it passes to some descendant but not others (1993, p. 86)

The problem with this conclusion is that a harmful or lethal mutation causes the entire line to die out, purging it forever from the population while millions of other lines carry on. With sex, because most mutations are recessive, many mutations that are not lethal are spread to the race in general. Problems result *only* if the same defect is inherited from both parents thus the harmful traits can accumulate in the race. With asexual animals the weaker lines are rapidly selected out, often in one generation.

Exceptions to these differences between sexual and asexual reproduction exist, but the generalizations noted above are the rule. The many researchers who have attempted to answer the question "what use is sex" for evolution have found a very limited level of support. Many of these explanations are *ad hoc* and ignore the major problem that sex does not provide an evolutionary advantage until the system is perfected—a topic which few have attempted to address, and those who have must rely on enormous speculations. The speculation in this field, Williams admits, is such that many researchers reason from a set of premises to a conclusion by knowing the conclusion in advance (1977, p. 6). He adds that the task of determining why sexual reproduction evolved seems "immensely difficult . . . because we can immediately see an enormous disadvantage in sexual reproduction" (pp. 155-169).

The data can be explained far better if we substitute for the evolutionary hypothesis the concept that the two different means of reproduction are not unlike the two basic human appendage types, the hands and the feet. As the hands are clearly superior in some situa-

tions, the feet in others, likewise asexual reproduction is a superior method for many kinds of animals, especially the so-called simple forms such as bacteria. Conversely, sexual reproduction is superior for other life forms, such as mammals and chordates in general. It would be impossible for bacteria to fulfill their critical ecological role of recycling if they reproduced sexually. Further, bacteria possess the advantages of *both* asexual and sexual reproduction by being able to exchange genes via plasmid transfer.

The major problem with the evolution of sexual reproduction is that for most traits:

at least one male and one female of a 'new mutant' would have to appear at the same time and in the same breeding community, in a bisexually reproducing organism, for the new type to persist (Sheppard, 1963, p. 239).

The major source of new traits for evolution to select from, according to the standard model, is mutation, although genetic drift, isolation, population size and other factors all play a small role. Most mutations known today are recessive and the larger the change the mutation causes, the more likely that it will be harmful (Sheppard, 1963, p. 239). Although thought experiments can be carried out with beneficial mutations, we have no empirical evidence from which to evaluate this event because we have no clear example to examine. In the words of Rust, "Not even a single 'positive' or adaptive mutation, in the sense of an improved function previously unavailable, has been documented in any organism" (Rust, 1992, p. 86).

Although evolution requires that sexual reproduction be strongly favored, animals that reproduce sexually are usually at the *bottom* end of the evolutionary hierarchy in terms of reproductive success. Further, major evolutionary development must have occurred in the sexually reproducing populations since they are the ones that are evolutionarily a long distance from the more simple so-called primitive life forms such as yeast and bacteria. Mutations have been produced in sexual organisms by irradiating the zygote or the gametes, but they either damage *only one* of the typical pair of genes that exist for a trait, or if both, the damage often will not affect the phenotype unless they are a dominant gene (Eberhard, 1985).

Whether a mutation is harmful depends on if it affects a dominant, or mixed dominant gene. The clear advantage of a pair of genes typical of all sexually reproducing organisms is why mutations have less effect. Bacteria have only one chromosome and do not have matched gene pairs. This is why they often dominate contemporary genetic work, especially in the recombinant DNA area and with other genetic manipulation techniques.

Most known mutations are recessive, meaning only some of the proteins they produce are non-functional in contrast to the dominant which produce *all* defective protein. For most mutations, enough functional protein can for this reason usually be manufactured, or the trait the gene codes for will exist because enough functional protein is produced by the normal gene. No documented cases exist of a beneficial mutation occurring simultaneously on *both* a gene and its corresponding allele. If a beneficial mutation occurred, presum-

ably it would be on a heterozygous dominant gene, and the protein which was produced before this mutation existed would now no longer be manufactured by the organism. Conversely, the majority of mutations in non-dominant genes which do not produce the normal protein would always, or at least in many cases, have a detrimental effect.

Therefore, although the situation with bisexual reproduction is more complex than Sheppard indicates above, postulating evolutionary change on the basis of mutations is fraught with difficulties. He adds that "moreover, such a small population as a single pair [with the mutation] will have little chance of surviving" (1963, p. 329). On the other hand, asexual reproduction allows mutations to be passed directly on to their offspring. If a mutation that was clearly beneficial occurred, its advantage would be immediate, and thus would result in a rapid increase in the number of the offspring with the advantage. This commonly has been observed in bacteria when a favorable strain rapidly takes over in an environment which is hostile to other strains. In conclusion, Williams' extensive survey of the literature appears to be valid:

The problem has been examined by some of the most distinguished of evolutionary theorists, but they have either failed to find any reproductive advantage in sexual reproduction, or have merely showed the formal possibility of weak advantages that would probably not be adequate to balance even modest recombinational load. Nothing remotely approaching an advantage that could balance the cost of meiosis has been suggested. The impossibility of sex being an immediate reproductive adaptation in higher organisms would seem to be as firmly established a conclusion as can be found in current evolutionary thought. (Williams, 1977, p. 11)

Yet, as Williams notes, if evolution is true, this conclusion "must surely be wrong" because asexual reproduction must have evolved first, and "lower" organisms still usually reproduce asexually and the higher, more evolved organisms reproduce sexually. The problem is primarily due to flaws in the basic evolutionary assumptions.

The Creationist Explanation

The creationist explanation for sex and sexual dimorphism is that it is part of the Creator's design for life. The male and female reproductive systems are physically and chemically harmonious, and this complex system, creationists argue, must have been designed simultaneously as *a unit* to be physically compatible. Likewise all the other sexual differences exist to enable the sexes to carry out their God designed role. Evolutionists must postulate that far more primitive systems once existed in evolutionary history that lacked all or most of these structures, and yet were able to function successfully. This would allow survival of the species and enable the organism to survive its main competitors. It is so difficult to hypothesize these proto-sexual structures that most evolutionists have not even tried, and those that have recognize the enormous problems in doing so (Williams, 1977). Like engine and car body units that are designed to be functionally integrated, the male and female sexual reproductive

system likewise must have been designed as a unit. Creationism can also answer Jones challenge:

Biologists have an adolescent fascination with sex. Like teenagers, they are embarrassed by the subject because of their ignorance. What sex is, why it evolved and how it works are the biggest unsolved problems in biology. Sex must be important as it is so expensive. If some creatures can manage with just females, so that every individual produces copies of herself, why do so many bother with males? A female who gave them up might be able to produce twice as many daughters as before; and they would carry all her genes. Instead, a sexual female wastes time, first in finding a mate and then in producing sons who carry only half of her inheritance. We are still not certain why males exist; and why, if we must have them at all, nature needs so many. Surely, one or two would be enough to impregnate all the females but, with few exceptions, the ratio of males to females remains stubbornly equal throughout the living world (Jones, 1993, p. 84)

Summary

The problem of the evolution of sexual anatomy and physiology and behavior from the more "primitive" asexual and simple cellular division was recognized as a major problem for naturalistic evolution from the very beginning of Darwinism. Evolution is totally inadequate to explain why males exist, although researchers as Jones have tried to come up with plausible explanations. Creationism, though, provides a clear explanation: sexuality exists because it is part of God's plan for humans and other organisms. Evolution focuses on survival only, God focuses on what is good for human happiness and His purposes for the universe. Why sex exists is rarely discussed even in works devoted to the evolution of sex, and it still remains a major problem in evolutionary theory (Ford, 1980, pp. 13-24). Works that purportedly discuss the evolution of sex largely cover only limited aspects of sexual selection, the putative advantages of asexual versus sexual reproduction and other concerns related to microevolution (Hapgood, 1979).

A reason for the lack of evidence is because it was alleged that the fossil record rarely preserved soft body parts; thus, ancient gonads and secondary sexual characteristics rarely can be studied. This is now known to be false, and a huge number of soft parts or their fossil impressions have been preserved in such places as the Burgess shale or on animals preserved in amber, tar pits, coal and other mediums.

Secondly, it is difficult even to speculate on the possible evolution of the gonads and the sexual reproductive system from the simple binary fission reproduction method. Obviously, binary fission must have continued for the animal to survive while the sexual system of reproduction was evolving. Problematic with this theory, though, is that it would not be selected for until it was highly functional and effectively could reproduce in ways superior to binary fission. A major concern for natural selection theory is that asexual and sexual reproduction are simply two means of reproducing, and one is not necessarily superior to the other, especially by evolutionary criteria. From an evolution-

ary standpoint, fission is in many ways superior relative to the number of offspring which allows a greater amount of selection to occur, and consequently causing a greater level of evolution. This is contrary to what evolution predicts, and it is apparent for these reasons that the creation explanation is superior.

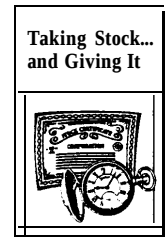
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