
The Present Also Explains the Past

A Response to Tooby and Cosmides

Robert W. Smuts

*Evolution and Human Behavior Program, University of Michigan,
Ann Arbor, Michigan*

I was surprised to find my comments (1989) on a paper by Buss (1989a) cited by Tooby and Cosmides (1990, pp. 392, 403) as an example of the fallacies of the anthropological school of Darwinism. It had never occurred to me that my comments might be regarded as a part of the great Darwinian Psychology/Anthropology debate (see especially the whole of *Ethology and Sociobiology* 11(4/5), 1990 and references therein). I admire much of Tooby's and Cosmides' work and do not endorse the fallacies they attribute to me.

My comments took issue with Buss's assumption that women have been equipped by natural selection with a uniform preference for rich males. My skepticism about the uniformity of female mate-choice criteria was read by Tooby and Cosmides (1990, p. 392) and also by Buss (1989b, p. 42) as an attack on the universality of adaptations. It was not. As Tooby and Cosmides themselves emphasize, universal adaptations often produce variable behavior (1989, pp. 36–37; 1990, pp. 394–395). That was my point. I have no disagreement whatever with their conclusion that “adaptations are usually population or species-typical” (1990, p. 392).

The second fallacy misattributed to me is faith in the power of “instantaneous Lamarckianism” (1990, p.403). Here the focus is on my statement that “the basic message of evolution for behavioral studies is that behavior always depends on context; individuals tend to behave appropriately in the various and changing circumstances they encounter—with “appropriately” defined as “whatever it takes to survive and reproduce” (Smuts 1989, p. 33). Tooby and Cosmides suggest that this statement describes a world governed by the “Lamarckian power of the environment to sculpt an organism immediately into the optimal design required by each newly encountered circumstance” (1990, p. 403).

On the contrary, I disagreed with Buss largely because I thought that

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Address reprint requests to: Robert W. Smuts, Evolution and Human Behavior Program, University of Michigan, Ann Arbor, MI 48109-1070.

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his view of uniform female mate-choice behavior was too much influenced by his own time and place and too little aware of the legacy of the past. The idea that biology makes it necessary for males to compete for resources, and females to choose the winning males, strikes me as an accurate reflection of a particular modern view of appropriate human sex roles. It may also be a fair description of what often happens in birds, but it bears little resemblance to the reproductive strategies of nonhuman primates or other mammals. A universal preference for rich males could have evolved in human females as an unusual mammalian mate-choice strategy only if male parental investment was consistently reliable and necessary for female reproductive success during our evolutionary past. My reading of the ethnographic, historical, sociological, and comparative evidence leads me to think that it probably was not. It certainly has not been in the many matrilineal/matrilocal societies, in which male investment in offspring has come mostly from mothers' male relatives rather than from mates (as Paul Turke has reminded me).

I know that mine is a minority opinion. Mainstream thinking about human evolution places far more emphasis on male parental investment than I think it deserves. But, right or wrong, my view on this issue is based on my understanding of the Environment of Evolutionary Adaptedness, not on faith in the power of the present to reinvent human nature. (This is not the place for extended discussion of male parental investment, but see additional comments in the Appendix.)

It is not necessary to be an instantaneous Lamarckian to predict that behavior directed by inherited adaptations will tend to be appropriate to present circumstances. As Tooby and Cosmides observe: "the adaptive correspondence between present conditions and present behavior . . . depends solely . . . on how different the present environment is from ancestral conditions" (1990, p. 378). All that is necessary to predict a tendency toward present adaptive behavior is the defensible belief that present circumstances closely resemble the circumstances in which the human psyche evolved in many of those particular respects that were most responsible for making us what we are.

All judgments about "how different the present environment is from ancestral conditions" depend on assumptions about the particular environmental challenges responsible for adaptive design. It does not matter how much the world in general has changed. As Tooby and Cosmides point out (1990, p. 388) every trait has its own unique Environment of Evolutionary Adaptedness. Human female mate-choice adaptations are likely to lead to diverse preferences with respect to male resources today if (whatever else has changed) parental investment has always been one of several alternative strategies for hominid males. Human female mate choices are likely to be adaptive today if (whatever else has changed) male mating strategies have always been a major constraint on female reproductive strategies, and if alternative male strategies and the counter-strategies available to females are much the same as they always have been.

It seems to me that the two sides of the Darwinian Psychology/Anthropology debate disagree less over basic principles than they do over the size of the differences between present environment and ancestral conditions, and over the range of human flexibility. Only if one believes that the differences greatly outweigh the continuities and outstrip the human capacity for flexible response does it follow that modern behavior is likely to be maladaptive, and that only closet Lamarckians will expect it to be otherwise.

Tooby and Cosmides list twenty-one modern human behaviors that they assume, without discussion, are maladaptive (1990, p. 401). I assume that all behaviors that are expensive, widespread, and persistent over at least several millennia must have had and may continue to have adaptive function. These include, from the list of twenty-one, recreational sex, alcohol use, pornography, sports, political dissidence, romance novels (tales, poems), adoption of nonrelatives, music, and, perhaps, analogs of all the rest. Behavior that looks very much like recreational sex surely is not a recent human aberration. It occupies bonobos of both sexes and all ages far more than it does most humans, and Hrdy and Whitten (1987) list eighteen other non-human primates in which copulation occurs throughout all or most of the female cycle. Alcohol use, to give another example, is not only widespread and costly, but probably preceded and may have led to the dawn of agriculture (Katz and Voigt 1986).

Tooby and Cosmides avoid discussion of such questions by insisting that whether modern behavior is adaptive or maladaptive is not worth arguing about. The whole issue is irrelevant, they say, because behavior is controlled by adaptations and adaptations are products of ancient history, not of recent experience.

I suggest, on the other hand, that this is a profoundly important issue. Recognizing the possibility that modern behavior may be adaptive focuses attention on evolution as an ongoing as well as an ancient process. It calls attention to the possibility that questions about the maintenance and modification of traits may be even more important than questions about original function. Important testable hypotheses can flow from the assumption that what appears to be maladaptive behavior may conceal current function with ancient origins. And, as Turke observes, "tests of current adaptiveness delimit the boundaries of human flexibility, and in so doing begin to identify and describe psychological mechanisms" (1990, p. 456).

Returning to the two examples I have already cited, there are, of course, a wide variety of hypotheses about the function of "recreational sex," none of which is mentioned by Tooby and Cosmides. Among the more promising is that "recreational sex" may regulate ovulation (Trevathan 1989, Veith et al. 1983). While it seems clear that the recent addition of alcohol to the diet of North American plains Indians has had disastrous effects, the use of alcohol almost certainly has much different effects in those Amazon basin tribes that traditionally have consumed about a third of their calories in the form of beer (Erikson 1990). One adaptive reason for this tradition, which

has also taken root in Africa, may be that fermentation is one of two ways of processing maize so that large quantities can be consumed without causing pellagra (Katz 1990). Fermentation also enhances the nutritional quality of wheat and barley "to a level almost comparable to that of meat" (Katz and Voigt 1986).

Tooby and Cosmides are right to stress that much can be inferred about past environments from the study of current design, whether or not current design remains adaptive. But much more can be learned when we are able to make inferences from current function as well as from current design. The discovery of previously unsuspected current function points directly to important unsuspected features of the Environment of Evolutionary Adaptiveness. The opportunity to make such discoveries is greatly reduced if we assume, instead, that modern "recreational" sex is no more than a byproduct of ancient sex drives combined with modern contraceptive technology, or that alcohol is abused because it has become cheap and widely available and just happens to make us feel good for a while and to be addictive for some people.

The search for hidden function in what seem to be grossly maladaptive traits has been among the most fruitful procedures of evolutionary science ever since Darwin (Alexander 1979, p. 20). It accounts for the modern theories of kin selection, reciprocal altruism, herding behavior, eusociality, alarm-calling, female choice of "handicapped" males, senescence, attachment, infanticide, and sex, to name only a few of its triumphs. Students of human behavior would be unwise to limit their employment of that useful tool by assuming that modern humans are the only organisms that usually behave maladaptively, or because they think that whether current behavior is adaptive or not just does not matter. The past explains the present, but the present can also explain the past. Since the present is so very much more accessible than the past it may have more to teach us, but only if we are open to its lessons.

APPENDIX

Some Reasons to Think that Parental Investment by Men and Reliance on It by Women Are Alternative, not Obligatory, Strategies

I began to suspect the conventional wisdom on human sex roles when I found long ago that the accepted historical data on women's employment in the United States grossly understated the economic contribution of women to the support of families (Smuts 1959, 1960). Until very recently, such overemphasis on the economic male and the dependent female has pervaded all branches of the literature on human behavior. Even in the field of animal behavior, the ornithological model of polygyny, with its focus on the eco-

onomic value of male territory, has been misapplied to mammals in spite of the fact that mammals are “dramatic examples” of the general rule that “females do all the investing, males do none of it” (Trivers 1985, pp. 207–208). Buss states that female preference for males offering resources “has been confirmed empirically in many nonhuman species,” but his references describe birds and a few unusual insects, fish, and frogs, not mammals (1989a, p. 2). In nonhuman primates, females need males not for their resources but for protection against aggression by other males (B. Smuts, in prep.) and male relationships with mothers and infants are best interpreted as mating effort rather than parental investment (B. Smuts and Gubernick, in press).

Draper and Harpending have written extensively on the role of resources in human reproductive strategies and on the psychological mechanisms involved (Draper 1989, Draper and Harpending 1988, and references therein). Draper describes the typical African pattern, which antedates the colonial era, as one in which “husbands and wives do not automatically regard their spouses as predictable and long-term sources of support either for themselves or their children,” and “women and children are largely self-supporting” (pp. 146, 152), often with major help from mothers’ relatives. A similar pattern has been found among poor blacks in American cities (Burton 1990, Stack 1974).

I have used the term “rich males” as a short way of referring to men with any of a cluster of attributes that indicate superior ability to provide resources needed by women and children, but do not necessarily include great wealth.

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