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Sociobiology, Status, and Parental Investment: Comment on Freese and Powell

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In their article, "Sociobiology, Status, and Parental Investment in Sons and Daughters: Testing the Trivers-Willard Hypothesis" (*AJS* 104 [May 1999]:1704-1743), Jeremy Freese and Brian Powell attempt to test the well-known sociobiological hypothesis of Robert Trivers and Dan Willard (1973) that parental investment in children of a particular sex varies by social status. Parents of high social status will tend to invest more in sons than in daughters, whereas parents of low social status will tend to invest more in daughters than in sons. Although much research on a variety of preindustrial societies shows considerable support for the Trivers-Willard hypothesis, Freese and Powell are interested in determining whether it will apply to a modern industrial society, specifically the United States. This is partly because Trivers and Willard themselves suggest that the hypothesis should apply to the contemporary United States, but also because Freese and Powell claim (quite dubiously, as we will see below) that "to expect the Trivers-Willard hypothesis to hold under contemporary conditions is consistent with the prevailing theoretical logic of sociobiology" (p. 1713). Freese and Powell's test of the applicability of the Trivers-Willard hypothesis to the United States makes use of the National Educational Longitudinal Study (NELS), which surveyed nearly 25,000 eighth-graders in 1988. They supplemented their analysis of this data set with data from the 1980 High School and Beyond Study (HSB). Their results show that high-status and low-status parents invested about equally in both sons and daughters. When there was a difference in the nature of parental investment by social status, it usually went in the opposite direction: High-status parents invested more in daughters than in sons (although the degree of differential investment was not large).

On the basis of these findings, Freese and Powell claim that suspicion is cast upon sociobiology because one of its most important hypotheses has been shown to be defective. However, this strong conclusion is completely unwarranted for at least three reasons. First, despite Freese and Powell's protestations to the contrary, the contemporary United States is not an appropriate society for testing the Trivers-Willard hypothesis, for reasons that will be indicated below. Second, a fair test of Trivers and Willard can only be made by examining parental investment in a large cross-cultural sample of a wide range of human societies. Even if Trivers and Willard believe that their hypothesis should apply universally, there are very good reasons to doubt this. What needs to be shown is the conditions under which it should be expected to hold and the contrasting conditions under which it should be assumed not to hold. Finally, the Trivers-Willard hypothesis is only one of many sociobiological hypotheses, and even if this hypothesis did not hold at all - which is certainly not the case - there are still many other sociobiological hypotheses that have been systematically tested and found to withstand these tests very well.

The Trivers-Willard hypothesis is actually a special case of a more general sociobiological hypothesis: Parents will invest more in those offspring with the greatest potential reproductive success. The classic test of Trivers and Willard was carried out

by Mildred Dickemann (1979). She looked at parental investment in three different societies: nineteenth-century British India, China between the seventeenth and nineteenth centuries, and medieval Europe. All three of these societies were highly stratified societies in which there was extreme competition for resources and for mates, and in all of them hypergyny – the marriage of women to men of higher status – was a common practice. Polygyny was practiced in India and China, and in Europe as well until after about the tenth or eleventh century, when polygyny was outlawed and monogamy was imposed by the Church and by law. Dickemann found much greater investment in daughters among lower-status groups and much greater investment in sons in higher-status groups in all three societies. This was indicated by much higher rates of female infanticide among higher-status groups and by the strong efforts made by lower-status parents to provide dowries for their daughters so they could compete for high-status husbands. In Europe female infanticide occurred less frequently among the middle and upper classes than it did in India or China, but female celibacy was common in Europe. Differential investment in sons and daughters by social status was especially great in India and China because of polygyny. In highly stratified, polygynous societies, there can be extreme variance in male wealth and male reproductive success, and thus the desire of high-status parents to favor sons and lower-status parents to favor daughters. Because it is generally the higher-status males who are polygynous, investment in sons by higher-status parents is the best route to the maximization of the number of grandoffspring, great-grandoffspring, etc.; within such a system, the sons of lower-status parents have less reproductive potential than daughters, and hence the practice of lower-status parents providing dowries for their daughters to help them attract high-status, wealthy males who can contribute substantially to the cultural and economic success of their grandoffspring, great-grandoffspring, etc.

Dickemann's research helps us see why the contemporary United States is not an appropriate society for testing the Trivers-Willard hypothesis. Although it is highly stratified, it has socially imposed monogamy, which greatly reduces the variance in male reproductive success. Moreover, the marriage system contains much less hypergyny than in preindustrial agrarian societies, with class endogamy being the general practice. Under such conditions, it is unreasonable to expect that there should be differential investment in sons and daughters by social status. For both lower-status and higher-status parents, the reproductive success of their sons and daughters will in most cases end up being approximately the same, and thus we should expect more or less equal investment in children of both sexes by parents of a wide range of statuses. Given the rapid entry of women into the full-time labor force in the last fifty years, equal investment in daughters and sons makes even more sense.

The importance of the type of marriage system (polygyny vs. monogamy) to parental investment has been shown for preindustrial societies by John Hartung (1976). Hartung looked at 411 societies drawn from the *Ethnographic Atlas* (Murdock, 1967) and found that polygyny was very strongly associated with a male bias in inheritance. Of the societies he examined, a full 97 percent that practiced general polygyny had a strong

or exclusive male bias. Where more limited polygyny prevailed, 80 percent of the societies had a strong or exclusive male bias, and where monogamy was the marriage practice only 58 percent of the societies had a strong or exclusive male bias.

The main reason why Freese and Powell go astray in their article is their failure to understand the kinds of claims that sociobiology makes. Like most other sociologists, the authors seem to think that sociobiology asserts some sort of direct, one-to-one relationship between biological templates and behavior – that sociobiology is a simplistic form of biological reductionism. Nothing could be further from the truth. Sociobiologists have always claimed that social behavior is the result of the interaction between biological templates and a wide range of influences coming from the physical and sociocultural environment. Much of human behavior is the result of *facultative* traits, or traits that require the organism to assess the nature of its environment and to respond in ways that will maximize reproductive success under those particular conditions. This is why, for example, a few human societies have exhibited the marriage form known as polyandry. Normally this marriage practice works strongly against the maximization of inclusive fitness, especially on the part of males; but under certain unusual environmental conditions polyandry may be the best option for both males and females (Durham, 1991).

Freese and Powell have also too readily accepted Stephen Jay Gould's claim that sociobiological hypotheses have been largely untested, or are even for the most part untestable. Gould is an extremely unreliable guide to the assessment of sociobiological claims because for a quarter of a century he has been engaged in a systematic disinformation campaign against these claims, in large part because of ideological convictions rather than theoretical logic or empirical evidence. In fact, numerous sociobiological hypotheses have been tested extensively against cross-cultural data and have stood up remarkably well to these tests. In a forthcoming work I examine much of the empirical evidence in favor of sociobiological arguments (Sanderson, 2001), but some widely tested and widely supported hypotheses can be mentioned briefly here. Inclusive fitness theory predicts that males should have a greater desire for sexual variety than females because having multiple sexual partners can enhance a male's inclusive fitness but do little or nothing to improve a female's inclusive fitness. This hypothesis is extremely well supported by the fact that some 85 percent of the world's societies are polygynous, only 14 percent are monogamous, and less than 1 percent practice polyandry (Murdock, 1967). It is also well supported by the fact that, even in highly monogamous societies, men tend to have many more sexual partners than women (Symons, 1979; Perusse, 1993). Inclusive fitness theory also generates the prediction that, because there is virtually no such thing as maternity uncertainty and because paternity uncertainty is widespread, men should exhibit much stronger sexual jealousy than women and this jealousy should be extremely common in human societies. This hypothesis is supported by research showing that male sexual jealousy is a human universal and that men frequently assault and even kill their wives or lovers for actual or suspected infidelity (Daly, Wilson, and Weghorst, 1982; Daly and Wilson, 1988; Buss, 2000). Another prediction of sociobiological theory is that, because of the

actions of sexual selection on humans, in all human societies males should exhibit more aggressive, competitive, and dominance-oriented behavior. This argument is strongly confirmed by, *inter alia*, the universal male monopolization of warfare, by the much greater prominence of males in every society's political institutions, and by male monopolization of every society's high-status positions. A fourth prediction drawn directly from sociobiological theory involves what is known as "discriminative parental solicitude": Natural parents should invest more in their children than stepparents. Daly and Wilson (1988, 1998), using cross-national and cross-cultural data, have tested this hypothesis by looking at rates of child abuse and neglect for both natural parents and stepparents and they find very strong support for it. Stepparents are much more likely to abuse and neglect their children than are natural parents; moreover, the more severe the child abuse, the greater the gap between the abusive behavior of natural parents and stepparents. One could go on at great length, but I trust the point is sufficiently made.

I strongly agree with Freese and Powell that sociologists should be trying to test sociobiological hypotheses empirically rather than just dismissing them because they do not fit sociology's entrenched Durkheimian injunction that "social facts can only be explained in terms of other social facts," or because they fear the political consequences of sociobiology. Freese and Powell are obviously friendly rather than hostile critics. Nevertheless, they are much too quick to dismiss a well-known sociobiological hypothesis, and much too ready to cast doubt on sociobiology as a whole, because of results obtained from a single society at a single point in time. Unfortunately, Freese and Powell exemplify the ethnocentric bias of the majority of sociologists, a bias that seems to equate knowledge of behavior in contemporary American society with knowledge of human behavior in general. Sociobiological hypotheses can only be adequately tested by the extensive use of cross-cultural and historical data and by an adequate understanding of the complexities and subtleties of sociobiological arguments.¹

References

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¹ Note that even if the Trivers-Willard hypothesis applied to contemporary industrial societies, Freese and Powell's failure to find support for it would still not falsify the hypothesis. So long as the hypothesis found widespread support in other societies, Freese and Powell would only have shown how the hypothesis had to be qualified. Monogamy is imposed by law in all industrial societies, but this fact does not falsify the hypothesis that human males are by nature polygynous, since polygyny is extremely common in preindustrial societies.

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