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Some Impacts of Paternity Studies on Primate Ethology

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This symposium volume summarizes the state of the art of determining paternity among primates in captivity and in the wild. With the same methods, we are told, we could identify siblings and estimate coefficients of relatedness, data that rank equally high on the list of a field worker's wishes.

Ethological field data on primates require thousands of observation hours. One great impact of the new methods of biochemical identification is that they will enhance, perhaps even multiply, the information to be drawn from the same behavioral data. To mention a few examples:

Since the rise of sociobiology, primatologists have searched for ways to test kin selection theory. As they could determine only matrilineal kinship, they knew just a part of the kin relationships at work. Masses of interactional data were not fully exploited.

Primate field workers have collected years of data in order to grasp the effects of male dominance on male fitness. With paternity unknown, their analyses ended with the unsatisfactory substitute measure of copulation frequency. The extensive studies on variations of male reproductive strategies were little more than interesting descriptions of primate behavioral versatility; now, researchers can measure and compare their effects on reproductive success.

Our own longitudinal study of Ethiopian hamadryas baboons in the seventies revealed behavioral mechanisms and a social structure pointing to an ability of harem males to monopolize their females at the cost of considerable effort. As the outbreak of the war with Somalia prevented

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further study and the paternity tests that had already been approved, the final piece of evidence that would have confirmed or rejected our interpretations is still missing. Even if we had been able to return after a few years, we would not have been able to recognize all previous individuals with certainty, and the descendency of the new generation would have been lost.

With the methods described in this volume, individuals still alive can be recognized genetically after an interruption in observations and the pedigrees reconstructed. Had we thought of collecting a dozen hairs of each troop member from the beginning, some of the damage to our project plans could most probably be mended even now.

The new biochemical methods of kinship analysis will also promote the ethological analysis of kin recognition by the primates themselves.

When a monkey or ape 'recognizes' her matrilineal kin she may simply be giving differential treatment to her early associates. Recognition of patrilineal kin in promiscuous societies is more demanding and may operate, for example, by one primate matching the phenotypes of other group members against its own.

The new tools described in this book, if put to work where they can have the greatest impact, will furnish primate social ethology with some hard answers where so far we have had to be content with weak correlative evidence.

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