

674 Plenary Lecture

EVOLUTIONARY TRANSFORMATION IN PRIMATE SOCIETIES: THE MACAQUE MODEL

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Macaques are characterized by both a profound unity in basic patterns of social organization and a large range of interspecific variation in social relationships. Evolutionary thinking explains diversity by focussing on natural selection as the preeminent driving force behind adaptative processes. It deals with the mutability of living beings to explain how they cope with the requirements of an ever-changing environment. In order to make sense of variations, however, we must specify the constraints that shape an organization and exert strong stabilizing selection on its components. I will argue that macaque societies are circumscribed to a limited number of social styles. Linkages between behavioral traits arise at any level of organization. Whereas evolutionary transformation depends on a balance between external and internal determinants, cross-species contrasts are currently better explained by phylogeny than by ecology; the core of species-specific interconnection systems in macaque societies has undergone limited changes over several hundred thousand years or more. On the other hand, the outcome of male reproductive competition cannot be predicted from social styles. Mating patterns are heavily dependent on the operational sex ratio, which is itself determined by climate seasonality. The link between behavior and ecology is not as simple as it was previously thought. Equilibrium models based on direct associations between behavioral traits and the environment cannot explain the diversity of social styles observed in macaques. Epigenetic constraints and historical contingencies must be considered part of the equation. Such lessons should apply to other primate species as well.

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