Hybridization in nature is a process central to understanding genetic introgression, speciation, and reproductive isolation; it can create either evolutionary dead ends or evolutionary opportunities for the organisms experiencing it. Recent studies of hybridization have been enhanced by the advent of sensitive, genetic marker-based techniques for inferring the degree of admixture occurring within individuals. We conducted a genetic marker-based analysis of hybridization in a large-bodied, long-lived mammal over multiple generations. Specifically, we analyzed patterns of hybridization between yellow baboons (Papio cynocephalus) and anubis baboons (P. anubis) in a well-studied natural population in Amboseli National Park, Kenya, using genetic samples from more than 450 individuals born over 36 years. We assigned genetic hybrid scores based on genotypes at 14 microsatellite loci using the clustering algorithm implemented in Structure 2.0, and assessed the robustness of these scores by comparison to pedigree information and through simulation. The proportion of hybrids in the Amboseli population has grown over time, but that the average proportion of anubis ancestry within hybrids is gradually decreasing. Further, we found that individual life history patterns were predicted by the proportion of anubis ancestry an individual exhibited. The effect was particularly striking in male baboons, as both dispersal and maturation occurred earlier in anubis than in yellow males; hybrid females reached menarche slightly earlier than yellow females, but maternal rank and the presence of maternal relatives had larger effects on female maturation than genetic background. We also identified novel effects of genetic background on mating patterns, including an advantage accruing to anubis-like males and assortative mating among both yellow-like and anubis-like pairs. These genetic effects acted alongside social dominance rank, inbreeding avoidance, and age to produce highly nonrandom mating patterns. Our results suggest that this population may be undergoing admixture-related evolutionary change, driven in part by life history differences between yellow and hybrid individuals, and in part by nonrandom mating driven by differences in genetic background.

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