

IN 1977, *SCIENCE* PUBLISHED A LANDMARK paper bringing together ecology and sexual selection to explain the diversity of mating systems (1). This framework has survived largely intact, with only changes in emphasis arising through insights into the importance of conflicts of interest between mating partners, and the near ubiquity of multiple mating by females (2). In their Review “Reproductive social behavior: cooperative games to replace sexual selection” (17 Feb., p. 965), J. Roughgarden *et al.* dismiss this framework in its entirety by stating that sexual selection is fatally flawed.

Sexual selection arises from the differential reproductive success of individuals, regardless of gender, that results from competition for mates (3). The caricature of the sexes (aggressive or showy males, coy or choosy females) that Roughgarden *et al.* deride is merely that—a caricature. It is not a basis for dismissing sexual selection any more than a rubber sheet and a football are a basis for a detailed discussion of the action of gravity. The crucial point is that sexual reproduction requires two individuals to pool their resources to produce offspring. Any heritable variation that leads to some individuals being more successful at finding mates than others will drive evolution by sexual selection, as will the existence of genes that allow individuals to invest less than their partner in a given mating and to use these resources for future reproduction. Roughgarden *et al.* need to show that such variation rarely occurs if they are to refute sexual selection. The empirical data are against them, however (2–4).

The competition and conflict fundamental to sexual reproduction cannot be dismissed, even if it may pay individuals to cooperate in some circumstances. The existence of benefits to cooperation does not remove conflict, as is apparent from animal and human societies (5). Sexual selection happens, however fervently some people may wish that it did not.

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