Sex, Violence, and Sociobiology

Ann Gibbons, in her generally excellent Research News article "Evolutionists take the long view on sex and violence" (20 Aug., p. 987), concludes her account of the sociobiology of violence toward stepchildren with a discussion of "environmental" interpretations of the phenomenon (less attachment bonding, more emotional difficulties, and so forth). It is important to note that the evolutionary and the environmental are not mutually exclusive alternatives. Sociobiologists make an important distinction (regrettably, one that is less appreciated in the social sciences) between two domains of interpretation: "proximate" and "ultimate" causation.

The former involves immediate causative mechanisms; the latter, the evolutionary or adaptive significance of the trait in question. Complete explanation requires attention to both forms of causation. The two complement rather than exclude each other. Consider, for example, sexual behavior (in animals or humans). This complex trait could be "explained" by the interaction of hormones, brain mechanisms, experience, and so forth. No matter how "correct," however, such proximate factors do not conflict with the evolutionary significance of sexual behavior, which relates to success in projecting copies of one's genes into future generations. The ultimate evolutionary goal is served by a diversity of mechanisms in differing species and situations. Similarly, the presence of reduced bonding and increased emotional conflict within stepfamilies is in no way inconsistent with the sociobiological approach.

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Plutonium Policy

I disagree with some of the views expressed by Edwin Lyman, Frans Berkhout, and Harold Feiveson (Letters, 13 Aug., p. 813) about plutonium policy. The United States does not have the capability to fabricate mixed plutonium-uranium oxide (MOX) fuel because the Carter Administration effectively stopped it 15 years ago. It is obviously technologically and economically feasible, because the French company Cogema reprocesses at Cap la Hague, fabricates MOX fuel at Marcoule, and routinely delivers it to Electricité de France to burn in its 900-megawatt-electric pressurized water reactors.

Civil plutonium use is real and legitimate. It is meaningless to say that if the