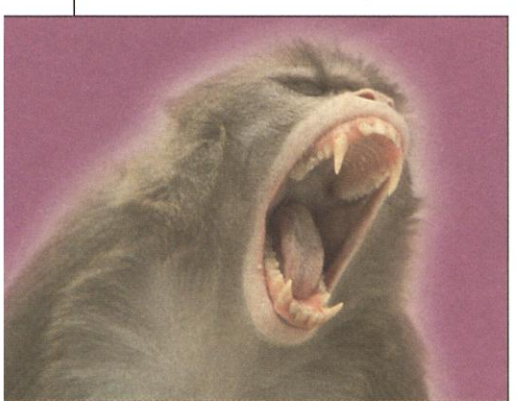
Violence: No Silver Bullet

From the neighborhood bully berating a meek classmate to the rhesus macaque screaming at a rival, displays of aggression are the weapon of choice throughout the animal kingdom for asserting dominance, challenging a higher ranking individual, or laying claim to food, water, and other resources. Most of the time, these conflicts are resolved peacefully. But on occasion harsh words and snarls escalate into left jabs and maulings. Why do individuals become violent, and how can we prevent them from injuring others or themselves? These are the central questions explored in this Special Issue on Violence.

First, a disclaimer. This issue does not attempt to penetrate all the ugly visages of violence, purposefully ignoring, for instance, violence inflicted by predators upon their prey, human cruelty to animals, and that uniquely human capacity for waging war. Rather, the following collection of News stories and research Reviews focuses on violence directed by individuals against members of their own kind.

Studying violence can be risky in its own right, at least to one's reputation. Many years ago the field was rife with theories such as phrenology, which held that personality traits, including violent tendencies, could be divined from the shape of the skull. But even while modern-day violence researchers have succeeded in distancing themselves from the discredited ideas of their predecessors, an ill-formulated comparison of inner city violence and the "jungle"—which some saw as equating black youths with monkeys—in the early 1990s helped ignite a fire storm of protest over studies on the biological roots of violence. Although hampered by the controversy, a small band of researchers is pursuing provocative theories that implicate dysfunction of serotonin-containing brain circuits in violent behavior (see News story by Enserink on p. 575 and the Review by Davidson *et al.* on p. 591); suggest that violence is pathological, in that it is "normal" aggression gone awry (see News story by Pennisi on p. 576 and the Review by de Waal on p. 586); and indicate that violent tendencies can begin to develop in early infancy (see News story by Holden on p. 580).



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Social scientists, on the other hand, have benefited from increased federal support for research aimed in part at pinpointing which antiviolence interventions work in which settings, one positive development in the aftermath of the tragedy at Columbine High School last year (see News story by Marshall on p. 570). Were Columbine and other recent school shootings symptoms of a diseased society? In fact, since the early 1990s, violent crime rates have declined in the United States, although rates remain substantially higher than in Europe (see News story by Hagmann on p. 572). Teasing out the factors that drive the ebb and flow of U.S. violent crime rates may help predict future trends and point to productive interventions (see Editorial by Blumstein on p. 545 and News story by Helmuth on p. 582), while profiling the personalities of victims—such as the type of police officer more likely to die in the line of duty—could help protect vulnerable subpopulations (see News story by Stokstad on p. 584).

There is no silver bullet capable of neutralizing the biological or psychological triggers that set an individual on a path toward violence. Indeed, it's still unclear how much animal studies can reveal about our own capacity for violence. But ultimately, researchers are bound to converge on a common goal: Deeper knowledge of the biology of violence will help social scientists match violence-prone individuals with intervention programs that can steer them onto a path toward conciliation and respect for the sanctity of life.

–RICHARD STONE AND KATRINA KELNER

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