Aggression, Cooperation, and Fairness

• Defining Aggression
• Ultimate Causes of Aggression in Mammals
• Proximate Causes and Heritability of Aggression
• Aggression in Humans
• Coalitions and Alliances in Primate Communities
• Reconciliation after Conflict in Primates
• Cooperation, Fairness, and Social Pressure
• Kindness and Compassion in Non-Human Primates
**Figure 21.1:** Gorilla male threatening by baring his teeth
Mad macaque
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Figure 21.2: Cheetah Marking Territory by Scenting
Male elephant seals fight over territory and harems of females. Winner takes all.
In many mammalian species, males fight to monopolize access to estrous females.
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Combined effects in young males of having suffered maltreatment during childhood and having low levels of monamine oxidase A. Both parameters affected four different measures of aggressiveness in similar ways.

From Science 297: p. 852
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Figure S18.a: Grooming is a common form of alliance building (reciprocal altruism) among social primates.
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Chimpanzees typically seal a post-conflict reunion, or reconciliation, with a mouth-to-mouth kiss.

From de Waal (2000)
Figure S21c: Conflict mediation by third party. Rhesus monkeys maintain close bonds despite frequent squabbles. Here, the alpha female (center) mediates between two daughters (each with child), who have been biting each other. The matriarch grunts while the daughters smack their lips. *From de Waal (2000)*
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Tufted capuchins, aka. brown or black-capped capuchins, live in forests of South America. They weigh 4-10 pounds and eat fruit and small animals.
Capuchin females refuse perfectly good food if they see a neighbor is getting a better deal.

NT = No token
RR = Reward refused

ET = Equality test: Partner exchanged for same quality food
IT = Inequality test: Partner exchanged for higher quality food
EC = Effort control: Partner was simply given higher quality food
FC = Food control: Higher quality food was displayed, but out of reach

Figure S21.f: Sense of “Fairness” in Capuchin Monkeys

Ultimatum Game
Update 21.1 Public Goods Game

• In a group of players who do not know one another, each subject is given an allowance, say $50. Each player decides secretly how much of his/her allowance to contribute to a communal pot. The experimenter then triples the pot and divides it evenly among the players. Each player also keeps the money they do not contribute.

• The group's total payoff is maximized when everyone contributes all of their money to the pot. However, each player is tempted to free-ride by contributing zero.

• Players are eager to punish free-riders at cost to themselves if given the opportunity. The presence of punishers may enhance a group’s performance (Boyd et al., 2010)
Figure S21.d: Culture-gene coevolution. Communities that punish free-riders out-compete communities that do not. *From Henrich (2006)*
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A compromise is reached after a weaning conflict between a chimpanzee mother and her 4-year-old son. The son is allowed to suckle on his mother’s lips rather than on her nipples. From de Waal (2000)