

A

	Rock	Scissors	Paper
Rock	ϵ	1	-1
Scissors	-1	ϵ	1
Paper	1	-1	ϵ

B

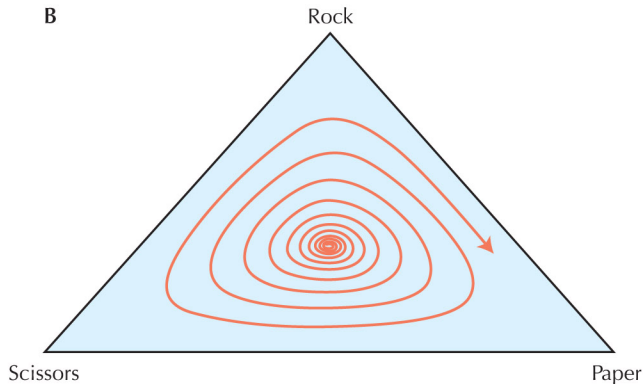


FIGURE 20.16. (A) A payoff matrix representing the children's game of rock–scissors–paper. The first row shows the payoff to an individual who plays rock when he or she meets each of the other strategies: Rock crushes scissors (payoff +1), but paper wraps rock (payoff -1). When there is a draw (e.g., rock meets rock), there may be a slight cost ($\epsilon < 0$) or a slight payoff to a draw ($\epsilon > 0$). (B) A genetic model of a haploid population in which three alleles of a single gene code for each of the three strategies. The rate of reproduction of each individual is proportional to the payoffs in A, with slight payoff to a draw ($\epsilon = 0.1$). The polymorphic equilibrium where the three strategies are equally frequent is unstable, and the population cycles outward until one of the alleles is lost. The *triangle* represents the frequencies of the alleles that code for the three strategies.