

Chapter 47

Evolutionary Aside 47.1--Alternative Explanations for the Evolution of Canine Teeth

Meat-eating animals, such as lions and wolves, have sharp and pointy canine teeth, which they use to capture prey and to tear chunks of flesh from it. Some herbivorous mammals, such as baboons and even some types of deer, also have long and sharp canines. Why would herbivores evolve such teeth? The answer is that they use them both in defense against predators and also in combat with other individuals of the same species. Usually this occurs among males fighting to control territories or compete for mates, an aspect of sexual selection discussed in chapter 54.

This example illustrates that principle convergent evolution can sometimes occur for different reasons. In other words, although species often convergently evolve similar adaptations in response to similar natural selection pressures (see chapter 20), the occurrence of convergent evolution does not necessarily mean that the feature has evolved to serve the same purpose in every instance. In this case, different natural selection pressures have led to the evolution of very similar traits.