FIGURE 28.1. Theory is used in two ways in evolutionary biology. (A) The evolution of a population can be traced forward in time, giving predictions about the effects of the various evolutionary processes. (B) We can focus on a sample of individuals and trace its ancestry backward in time. This allows us to make inferences about the past processes that shaped the sampled genes. Genes are shown by dots, with color indicating allelic state (red or black). There is a single mutation (black → red) in the ancestry of the five sampled genes.

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