



FIGURE 20.30. Phylogenetic evidence for sensory bias. (A) A male tungara frog (*Physalaemus pustulosus*) calling. (B) The phylogeny shows the relationships between four species in the genus *Physalaemus*. The four boxes (top of the tree) show the calls in the four species and the single box (base of the tree) is the inferred call of their ancestor. The sister species *P. petersi* and *P. pustulosus* have the chuck (black bars), but both *P. pustulosus* and *P. coloradorum* females prefer the chuck (P^+), even though males of *P. coloradorum* do not express it. This shows that the female preference for the chuck evolved before the males evolved this trait. (Female preferences have not been tested in the other two species.)

20.30B, redrawn from Kirkpatrick M. et al., *Nature* 350: 33–38, © 1991 Macmillan, www.nature.com