



Figure 4.22 Inhibitory-resetting in five species of acoustic insects (from Greenfield 1997a, Greenfield et al. 1997). (a) Call-delay histograms showing the frequency distribution of call onsets of a focal male following playback of a single, randomly timed stimulus call whose onset is at time 0. In each species there exists an interval beginning shortly after the onset of the stimulus call during which the focal male calls little or not at all. Horizontal bar indicates the typical duration of the precedence effect in the species: Females hearing two identical, spatially separated calls that respectively begin at time 0 and at any later time prior to the end of the bar are likely to orient toward the first call. (Reprinted from *The Bionomics of Grasshoppers, Katydid, and their Kin*, p. 213, with permission of CAB International; reprinted from *Perspectives in Ethology*, vol. 12, with permission of Kluwer Press.) (b) Phase-response curves showing the relationship between response phase of the focal male's calls and stimulus phase of a single, randomly timed stimulus call. In synchronizing species (*Neoconocephalus spiza*, *Sphyrmetopa femorata*), response phase is relatively large for a given stimulus phase, and PRC slope ( $s$ ) is  $\geq 0.7$ ; in alternating species (*Ephippiger ephippiger*, *Ligurotettix coquilletti*, *L. planum*), response phase is relatively small for a given stimulus phase, and PRC slope is  $< 0.7$  (Greenfield et al. 1997). (c) Response phase is the proportional increase or decrease ( $\times 360^\circ$ ) in the male's call period ( $T$ ) concurrent with playback of the stimulus call (open horizontal bar). Stimulus phase represents the timing of the stimulus call during the focal male's concurrent call period,  $T'$ . (Reprinted with permission from the *Annual Review of Ecology and Systematics*, vol. 34 © 1994 by Annual Reviews www.AnnualReviews.org.)

