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Investigations of the Precedence Effect in Budgerigars (*Melopsittacus undulatus*)

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The precedence effect has previously been found in mammals, anurans, invertebrates, and one species of bird, the barn owl. Here, the precedence effect was measured in a small parrot, the budgerigar (*Melopsittacus undulatus*). The general hearing capabilities of budgerigars have been well examined. While they have unremarkable sound localization abilities, they do exhibit free-field binaural unmasking at amounts similar to those found in humans with much larger heads. Using operant conditioning procedures, we examined whether budgerigars exhibited the precedence effect in a manner similar to humans and other animals. Psychoacoustic methods were used to measure discrimination performance of click pairs from different locations in space and separated by a short delay, simulating a sound source and its echo. Localization dominance was found at interstimulus delays of 0.5 ms to 5.0 ms, where discrimination performance between click pairs was high because the echoes were suppressed. Discrimination performance was poor at shorter and longer interstimulus delays, during summing localization and past the echo thresholds. Further experiments showed that intensity differences between a lead-lag stimulus pair could override time differences between the lead and lag, the timecourse of the aspects of the precedence effect changed with the intensity and duration of the stimuli but were not asymmetric with respect to leading stimulus location, localization dominance could be built-up and broken down, localization dominance occurred along the midline where minimal interaural time difference cues were available, and two other species of small birds also exhibited the aspects of the precedence effect. Most of these results are similar to those found previously in other animals, suggesting that the precedence effect is a general auditory mechanism for suppressing echoes in an animal's environment.