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# Fast Detection for Natural Animal Sounds

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Human listeners seem remarkably good at identifying complex and natural sounds. Relatively little attention, however, has been paid to the simple detection of such sounds. The present experiments measured the time course of sound detection in human listeners. Two categories of sounds were used: a train of 1-kHz pure tone pulses varying along an Inter Onset Interval dimension (termed here "IOI" sounds) and animal call sound samples. All sounds were equalized in loudness in a preliminary experiment. The task consisted of a simple reaction time, in which listeners were presented with interleaved IOI and animal sounds and had to manually press a button as fast as possible when they heard any stimulus. Two main results were observed. First, reaction times were significantly shorter for IOIs of 50, 33 and 25 ms than for an IOI of 100 ms, with no significant differences between IOIs of 33 and 25 ms, highlighting a threshold at 33 ms. Second, average reaction times were significantly shorter for animal sounds than for IOI sounds. Differences in terms of spectral content and temporal modulation characteristics might explain part of these effects. These results also suggest a fast detection advantage for natural animal sounds.