



*Figure S1.* Likelihood that the sound conveys an object bouncing as a function of Tau. Tau is a single value that reflects the rate of change of the interval between impulses. Small Tau values indicate that the intervals between impulses are decreasing at a fast rate, and the impulses are located close together. Large Tau values indicate that the intervals between impulses are steady, and the impulses are located equally apart in time. Each of the sounds have an  $III_o$  of 400 ms, and the same number of impulses (6). Tau is the only parameter that is changing between the sounds. A rating of 10 corresponds to the sound being extremely likely to have conveyed an object bouncing, and a rating of 0 corresponds to the sound being not at all likely to have conveyed an object bouncing. Standard error of the mean is reflected by the error bars.