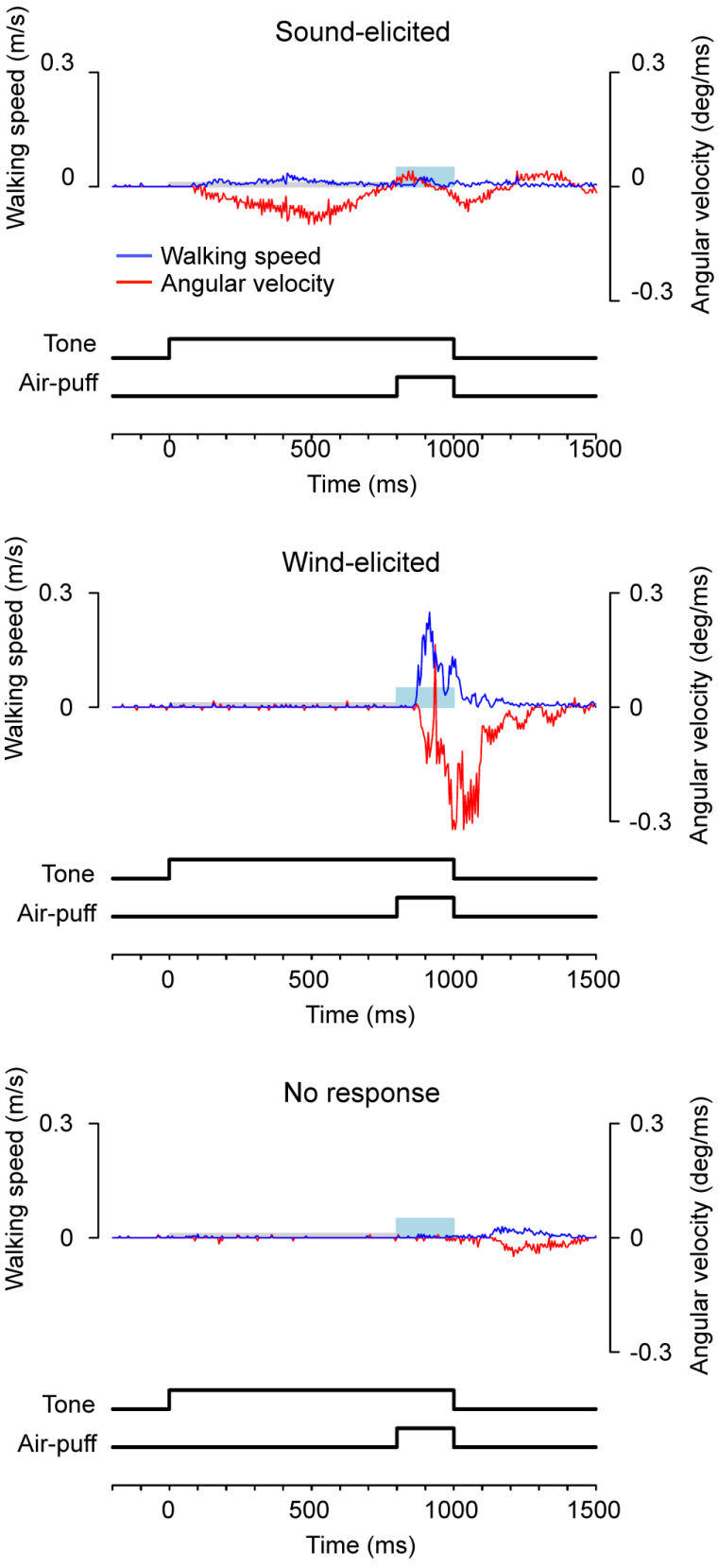

Fig. S1. Classification of behaviors in response to multimodal stimulation. The typical courses of walking speed (red traces) and turn angular velocity (blue traces) during the pure tone for 1 s and air-puff for 200 ms (lower black traces). Based on their time course and magnitude, a cricket's behavior was classified into three responses termed 'wind-elicited', 'sound-elicited' and 'no response'. If a cricket started to walk 800 ms before the air-puff stimulus and the maximum walking speed was >0.01 m/s (indicated by the gray-shaded area), then its response was classified as a 'sound-elicited' response. If a cricket started to walk after the onset of the air-puff stimulus and the maximum walking speed in the initial response was >0.05 m/s (indicated by the blue-shaded area), then its response was classified as a 'wind-elicited' response. Non-responses, including no walking, were classified as a 'no response'.

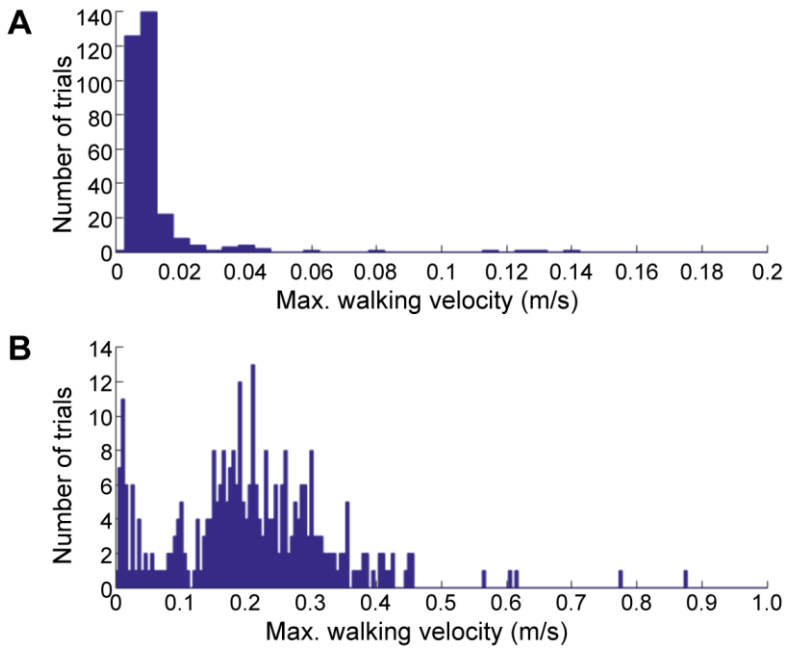

Fig. S2. Frequency distribution of the maximum walking velocities in control (tone-free) group. (A) Distribution of the walking speed data recorded in the period of 800 ms before the air-puff stimulus of 0.90 m/s. The walking at the speed of >0.01 m/s are very rare , and most of these movements will result from voluntary walking activity. Even if the cricket stood still on the treadmill, the optical sensor detected vibration of the Styrofoam ball lifted by airflow. To separate this vibration noise and the slow rotation caused by voluntary walking, we set the threshold to 0.01 m/s. (B) Distribution of the walking speed after the air-puff stimulus (0.90 m/s). Distinct two groups were observed: Larger group with high speed will represent the air-current-evoked responses, and smaller group with low speed will represent the voluntary walking and artificial noise. Thereby, to identify the air-current-evoked responses, we set the threshold to 0.05 m/s that can divide these two groups.

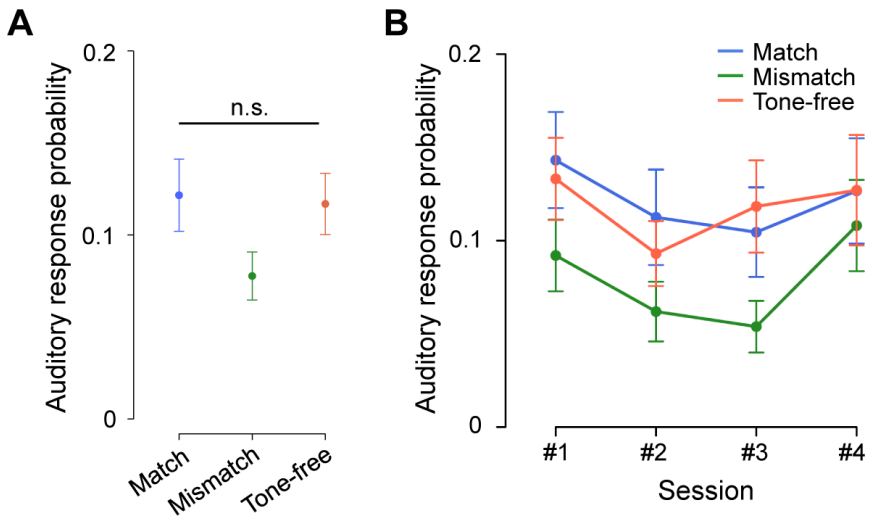

Fig. S3. A preceding acoustic stimulus rarely triggered walking in crickets on its own. (A) Probability of a walking response for the period of 800 ms before the onset of an air-puff in the three stimulation protocols. The data in (A) and (B) contain the results of responses to the air-puffs at five different velocities (0.26 – 1.11 m/s) in the two-directions test. Each plot in (A) represents the mean response probability in 40 trials for each individual, and the error bars indicate ± SEM (n = 40 animals for each protocol). There were no significant differences in the response probabilities among the stimulation protocols ($p = 0.128$, one-way factorial ANOVA). (B) Relationships between the order of sessions and the auditory response probability. Each plot in (B) represents the average probability in 10 trials for each individual, and the error bars indicate ± SEM (n = 40 animals for each protocol).