fitted a divisive inhibition model to the data. The model contains an array of orientation selective mechanisms whose response corresponds to the stimulus elicited excitation, raised by a power, divided by an inhibitory component plus a constant. The surround modulation in the adapter is represented by a multiplicative parameter that captures sensitivity modulation between center-surround mechanisms.

Grant: none

Keywords: spatial vision, computational model, lateral inhibition, psychophysics

Falling Pitch Imitating Doppler Shift Facilitates Detection of Visual Motion in The Extreme-Periphery

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Previous studies demonstrated that concurrent auditory stimuli can bias visual motion perception in the periphery more than in the fovea (e.g., Takeshima & Gyoba, 2013), and auditory becomes crucial when reliability of vision is reduced (e.g., Schmiedchen et al., 2012). We investigated if auditory affects detecting extreme-peripheral visual motion from behind, which is possibly one of the most salient situations since visual ambiguity is very high and detecting such motion can be ecologically critical to survive. In the experiment, a sequence of three 204 ms dots (255 ms SOA) was presented in the extreme-periphery (individually set by the largest eccentricity with 75% detection); each dot was presented at 3 adjacent locations with 2° distance so as to have apparent motion forward, or at the same location. As auditory stimuli, we employed concurrent beep with falling pitch, which roughly imitated Doppler pitch shift for passing-by object. We employed concurrent beep with rising pitch as a control, in addition to another no sound control. The results showed the concurrent beep with falling pitch increased the hit rate for motion detection, relative to that with no sound and rising pitch beep. Underlying mechanism was discussed with signal detection analysis.

Grant: Yamaha Motor Corporation U.S.A.

Keywords: periphery, cross modal, motion detection, visual perception

Motion-Generated Optic Flow Facilitates Perception When Visual Images are Blurry

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Traditionally, visual functioning is thought to correlate with visual acuity, and clear images precede successful event or scene identification. In natural viewing, however, there are two sources of optical information: static images and motion-generated optic flow. Each specifies spatial structures. Each functions largely independently of the other. When optic flow and blurry images coexist, they interact and yield effective and stable perception, because the detection of flow is unaffected by image blur and optic flow compensates for the loss of image details. In two studies, we tested how events and scenes were identified when visual images were blurry and with relative motions between observers and world structures. We found that observers did not identify

i-PERCEPTION

The 15th Asia-Pacific Conference on Vision (APCV), 2019

The 15th Asia-Pacific Conference on Vision was held in Osaka, JAPAN, from 29th of July to 1st of August, 2019. The conference aimed to facilitate discussion on vision research in Asian-Pacific region, attended by 458 participants from all over the world. The program consisted of four keynote lectures, 13 symposia including 57 speakers, and 50 oral and 220 poster presentations. The organizing committee are grateful to all the contributions.

The Abstracts are provided below. Keynote talks are presented first, symposia second, and then the contributed talks and posters are listed by session.

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