The University of Hong Kong
Department of Psychology

Departmental Seminar

Only the Perceived Target Direction Matters? - Visual Strategies Adopted in Our Guidance of Steering Towards a Target

Date: August 30, 2013 (Friday)

Time: 11:30 a.m. – 12:30 p.m.

Venue: Room 813, 8/F, The Jockey Club Tower, Centennial Campus, HKU

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There has long been a debate on which of the following two strategies we adopt while we are steering towards a stationary target: (1) Optic Flow Strategy, which suggests that we can find our ways towards our target by the alignment of our visually perceived heading (e.g., through locating the Focus of Expansion, FOE, within the optic flow field) with the target. (2) Perceived Direction Strategy, in which we move towards a target by simply aligning our perceived straight ahead with the target. As we typically walk straight forward in our daily lives instead of making crab motions, our FOE is usually well aligned with our straight ahead while we are walking and it is difficult to tell which of the two strategies a person adopts when we observe him or her walking in naturalistic settings.

Previous experiments have used different means to displace the FOE we perceive when we are walking straight forward from our perceived straight ahead, and inconsistent results have been obtained – some showed that only the perceived direction strategy is used, while some found signs that both strategies are used simultaneously. Scholars supporting the perceived direction strategy suggested that the deviation of participants' locomotive paths from that predicted by perceived direction strategy observed in some experiments could be due to participants' shifts in their perceived straight ahead driven by the displaced optic flow paradigm. However, little work has addressed this concern so far, and therefore, the experiment reported by this presentation was designed to fill in this gap. In the experiment, participants were required to steer in virtual environments with displaced optic flow (and thus also FOE) for multiple trials, with their steering performances as well as their shifts in perceived straight ahead location at the end of each trial measured. The results support that the displaced optic flow paradigm can drive shifts in participants' perceived straight ahead, however, after taking into account this shift, participants still steered on paths intermediate between that predicted by the two different strategies, showing that both optic flow and perceived egocentric direction of the target have their own direct effects on our guidance of steering behaviors.