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Walking without visual motion reduces subsequent vection

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Walking without visual motion reduces subsequent vection

Abstract

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apply two standard accumulation models – the diffusion (Ratcliff & McKoon, 2008) and the LBA (Brown & Heathcote, 2008) – to the detection of heterogeneous multi-attribute targets in a simulated unmanned-aerial-vehicle operator task. Despite responses taking two seconds or more and complications added by realistic features such as a complex target classification rule, interruptions from a simultaneous navigation task and time pressured choices about several simultaneously available potential targets, these models performed well descriptively. They also provided a coherent psychological explanation of the effects of decision uncertainty and workload manipulations. Our results support the wider application of standard evidence accumulation models to decision-making in applied settings.

How distinct is the coding of face identity and expression? Evidence for some common dimensions in face space

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The processing of face identity has traditionally been considered to be distinct from the processing of face expression. However, recent evidence suggests that brain areas that code for identity may also code expression, and vice versa. Moreover, individual differences studies have shown associations between the ability to recognise face identity and expression. In this study we use perceptual aftereffects to demonstrate the existence of dimensions in perceptual face space that code both identity and expression, further challenging the traditional view. Specifically, we find a significant positive association between face identity aftereffects and expression aftereffects, which dissociates from face (gaze) and non-face (tilt) aftereffects. Importantly, individual variation in the adaptive calibration of these common dimensions significantly predicts ability to recognise both identity and expression. These results highlight the role of common dimensions in our ability to recognise identity and expression, and show why the high-level visual processing of these attributes is not entirely distinct.

Walking without visual motion reduces subsequent vection

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Compelling illusions of self-motion can be induced in physically stationary observers by visual stimulation alone. These illusions are known as vection. Here we examined the effect of walking without optic flow on subsequent vection induction. Participants walked for 5 minutes around campus before they were exposed a series of vection-inducing displays. One group walked while wearing Ganzfeld goggles (which prevented them from seeing any details of the outside world; resulting in no optic flow). The other group walked with normal vision (i.e. with optic flow). Directly after walking, we measured the latency and strength of vection induced by the radially expanding patterns of optic flow. We found that walking without optic flow both delayed vection onset and reduced vection strength. These findings suggest that walking without optic flow triggered a sensory readjustment, which reduced the ability of optic flow to induce self-motion perception.

Some distraction may be a good thing

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Distraction generally refers to an additional stimulus or task that draws attention away from a primary task, indeed a key function of attention is to filter out distracting stimuli. This provides a challenge for attentional mechanisms: how and why are some stimuli “bounced” from early processing, while others reach conscious awareness? We used a dynamic inattention blindness paradigm to explore how distraction affects conscious recognition of unexpected objects. Participants were required to track moving objects over a number of sequential trials. During critical trials an unexpected object moved horizontally across the screen. We demonstrated a significant increase in the detection of the unexpected object when participants experienced a transient, irrelevant distractor. In Experiment 1, the distractor was a tone set within music, and in the second experiment the distractor was a visual screen flicker. These results