

170/06 - "Seeing the future: Exploring presentiment with eye gaze and pupillary dilation" - only abstract available

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Objective: A broad range of human activity is involved in anticipatory behavior, from the placebo effect, to predicting the next influenza strain, to catching a baseball. Conventional models of anticipation assume that events unfold in a unidirectional flow of time, strictly from past to future. This assumption was tested using the behavior of the eye as a means of detecting unconscious perceptions of future events.

Method: Pupillary dilation, spontaneous blinking, and eye movements were tracked before, during and after participants viewed photographs with varying degrees of emotional affect. Photos were selected uniformly at random, with replacement, from the International Affective Picture System. Eye data prior to exposure to emotional vs. calm photos were compared using nonparametric differential procedures. Eye data were predicted to show larger anticipatory responses before emotional photos than before calm photos under conditions that excluded sensory cues, statistical cues, and other conventional means of inferring future events.

Results: Pupillary dilation and spontaneous blinking increased more before emotional vs. calm photos (combined $p = 0.00009$). Horizontal eye movements indicated a brain hemisphere asymmetry before viewing the photos that was appropriate to both the emotionality ($p = 0.05$) and the valence of the future images ($p = 0.01$). Overall females tended to perform better than males.

Conclusion: In agreement with the outcomes of previous studies using other physiological variables to detect "presentiment" effects, this experiment suggested that comprehensive models of anticipatory behavior may require consideration of transtemporal influences from the future.

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