

INTUITION THROUGH TIME: WHAT DOES THE SEER SEE?

Dean Radin, PhD,^{1,#} and Ana Borges, JD, MS²

Objective: A great deal of human activity is involved in anticipating the future, from predicting the next influenza strain to the expectations that underlie the placebo effect. Most models of anticipation take for granted that events unfold in a unidirectional flow of time, from past to future. Two experiments were conducted to test this assumption.

Design: 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. Experiment one used 592 photos from the International Affective Picture System; experiment two used a custom-designed pool of 500 photos. Eye data before exposure to the photos were compared by using nonparametric techniques.

Outcome Measures: Eye data were predicted to show larger anticipatory responses before randomly selected emotional photos than before calm photos, under conditions that excluded sensory cues, statistical cues, and other conventional means of inferring the future.

Results: Data contributed by 74 unselected volunteers in two experiments showed that: (a) pupillary dilation and spontaneous

blinking were found to increase more before emotional versus calm photos (combined $P = .00009$), (b) horizontal eye movements indicated a brain hemisphere asymmetry before viewing photos, appropriate to both the emotionality ($P = .05$) and the valence of the future images ($P = .01$), (c) participants selected for independently obtaining significant differential effects in pupillary dilation showed positive correlations between their eye movements before versus during exposure to randomly selected photos ($P = .002$), and (d) a possible “transtemporal interference” effect was observed when the probability of observing future images was varied ($P = .05$ [two-tailed]). Gender splits on these tests showed that overall females tended to perform better than males.

Conclusions: These studies, which replicate conceptual similar experiments, suggest that sometimes seers do see the future. This implies that developing comprehensive models of anticipatory behavior, from understanding the nature of intuition to the placebo effect, may require consideration of transtemporal and teleological factors.

Key words: Intuition, anticipation, eye gaze, pupillary dilation, presentiment

(*Explore* 2009; 5:200-211. © Elsevier Inc. 2009)

INTRODUCTION

Evidence-based medicine promotes the idea that medical decisions should be based upon a rational assessment of the outcomes of clinical trials, scientific experiments, and reviews of the available literature. The idea has evoked substantial interest, as demonstrated by over 50,000 journal articles containing the phrase “evidence-based medicine,” nearly half of which were published since 2005 (based on a search of PubMed in February 2009). Unfortunately, the literature relevant to any given medical decision is so extensive, interpretation of evidence so uncertain, and time to assess the evidence so limited, that realistically practitioners must also rely on their intuition.^{1,2} Intuitive hunches (knowing without knowing how you know) are conventionally attributed to such sources as forgotten expertise, implicit learning, and unconscious somatic influences.^{3,4} But there is also evidence that those explanations may not account for all forms of intuition. Sometimes people report accurate hunches about future events that could not have been inferred.⁵ These “prefeeling” intuitions are called *presentiment*.⁶

Understanding the full scope of intuitive abilities, especially intuitions involving future events, is important because a large percentage of the world’s workforce is engaged in anticipating the future. Physicians aim to predict their patients’ course of healing, epidemiologists anticipate health epidemics, geologists predict earthquakes, and intelligence agencies anticipate terrorist acts. The placebo effect can be thought of as the consequences of anticipating good health. In sports, anticipation allows us to hit and catch objects moving faster than we can see. It prevents us from passing out when we stand up from a sitting position,⁷ it determines what we see or fail to see,⁸ and it forms the basis for an entire class of humor.⁹ Anticipation is also one of the principal characteristics of living systems, perhaps *the* key feature that distinguishes living from nonliving. As biologist Robert Rosen wrote,

Strictly speaking, an anticipatory system is one in which present change of state depends upon future circumstances, rather than merely on the present or past. As such, anticipation has routinely been excluded from any kind of systematic study, on the grounds that it violates the causal foundation on which all of theoretical science must rest, and on the grounds that it introduces a telic element which is scientifically unacceptable.¹⁰

Indeed, most conventional efforts to model anticipation assume that it can be fully understood within the constraints of a

1 Institute of Noetic Sciences, Petaluma, CA

2 Department of Psychology, University of Northampton, England

Corresponding Author. Address:

101 San Antonio Road, Petaluma, CA 94952

e-mail: dean@noetic.org