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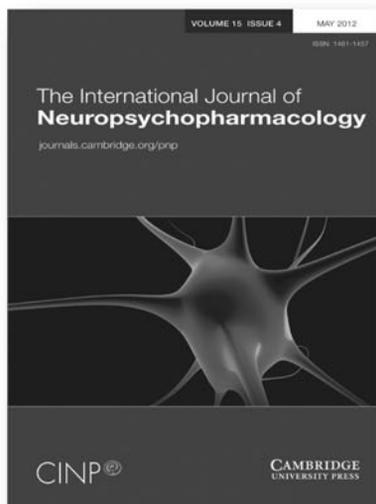


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The artful mind meets art history: Toward a psycho-historical framework for the science of art appreciation

Nicolas J. Bullot and Rolf Reber

To appear in upcoming issues (2013)

Whatever next? Predictive brains, situated agents, and the future of cognitive science

Andy Clark, *University of Edinburgh*

Brains, it has recently been argued, are essentially prediction machines. They are bundles of cells that support perception and action by applying a hierarchical generative model that aims to match incoming sensory inputs with top-down expectations or predictions. Such accounts offer a unifying model of perception and action, illuminate the functional role of attention, and may neatly capture the special contribution of cortical processing to adaptive success. The target article critically examines this "hierarchical prediction machine" approach, concluding that it offers the best clue yet to the shape of a unified science of mind and action.

With commentary from ML Anderson & T Chemero; N Block & S Siegel; H Bowman, M Filetti, B Wyble & C Olivers; B Bridgeman; G Buckingham & MA Goodale; DC Dennett; T Egnér & C Summerfield; TA Farmer, M Brown & MK Tanenhaus; K Friston; T Froese & T Ikegami; P Gerrans; PA Gowaty & SP Hubbell; JB Hirsh, RA Mar & JB Peterson; L Holm & G Madison; EL Khalil; P König, N Wilming, K Kaspar, SK Nagel & S Onat; DYJ Little & FT Sommer; L Muckli, LS Petro & FW Smith; B Paton, J Skewes, C Frith & J Hohwy; WA Phillips; D Rasmussen & C Eliasmith; A Roepstorff; D Ross; RS Schaefer, K Overy & P Nelson; AK Seth & HD Critchley; N Shea; SM Silverstein; A Sloman; MW Sprattling; T Trappenberg & P Hollensen

Can quantum probability provide a new direction for cognitive modeling?

Emmanuel M. Pothos, *City University London*, and Jerome R. Busemeyer, *Indiana University*

One of the dominant traditions in cognitive modeling is classical (Bayesian) probability (CP) theory. Yet considerable evidence has accumulated that human judgment often goes against classical principles. We discuss quantum probability (QP) theory as an alternative formal probabilistic framework for understanding cognition. In QP theory, probabilistic assessment is often strongly context- and order-dependent; individual states can be superposition states (which are indefinite with respect to some specific judgment), and composite systems can be entangled (they cannot be decomposed into simpler subsystems). We present several fundamental empirical findings that indicate cognitive processes often obey quantum rather than classical probability principles.

With commentary from D Aerts, J Broekaert, I Gabora & S Sozzo; H Atmanspacher; MVC Baldo; A Banerjee & B Horwitz; C Behme; R Blutner & P beim Graben; PJ Corr; A de Castro; EN Dzhaferov & JV Kujala; DR Franceschetti & E Gire; A Gelman & M Betancourt; C Gonzalez & C Lebiere; RC Grace & S Kemp; SR Hameroff; JA Hampton; AI Houston & K Wiesner; A Kaznatcheev & TR Shultz; EL Khalil; P Kusev & P van Schaik; MD Lee & W Vanpaemel; BC Love; BJ MacLennan; JN Marewski & U Hoffrage; D Mender; DJ Navarro & I Fuss; BR Newell, D van Ravenzwaaij & C Donkin; HR Noori & R Spanagel; M Oaksford; TJ Pleskac, PD Kvam & S Yu; T Rakow; D Ross & J Ladyman; J Shanteau & DJ Weiss; TC Stewart & C Eliasmith; K Tentori & V Crupi

Among the articles to appear in forthcoming issues of BBS:

A. Clark, "Whatever next? Predictive brains, situated agents, and the future of cognitive science"
E. M. Pothos & J. R. Busemeyer, "Can quantum probability provide a new direction for cognitive modeling?"
L. Schilbach, B. Timmermans, V. Reddy, A. Costall, G. Bente, T. Schlicht & K. Vogeley, "Toward a second-person neuroscience"
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