New Content From *Current Directions in Psychological Science*

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[Psychological Measurement in the Information Age: Machine-Learned Computational Models](#)
Sidney K. D'Mello, Louis Tay, and Rosy Southwell

Machine-Learned Computational Models (MLCMs)—computer programs learned from data, typically with human supervision—are an emerging approach that combines computing and information sciences with real-world data and that can be used to inform psychological science. D'Mello and colleagues compare MLCMs with traditional computational models and assessment in psychological science. They give examples of MLCMs from cognitive and affective science, neuroscience, education, organizational psychology, and personality and social psychology. The authors also discuss the accuracy and generalizability of MLCM-based measures, privacy and security concerns associated with their use, and matters of data interpretability and fair use.

[Digital Life Data in the Clinical Whitespace](#)
Glen Coppersmith

In the increasingly digital world, aspects of people's lives are encoded in routine interactions with technology. Over the past few years, psychologists and technologists have been exploring what possibilities these digital life data might hold for improving mental health and well-being. Here, Coppersmith examines some of the recent advances in this field; considers ethical and pragmatic implications; and explores a few areas where he believes these advances could lead to significant changes. This technology holds special promise for providing information about a patient's life in between clinical encounters, in what is sometimes called the clinical whitespace.

[Ten Lessons About Infants' Everyday Experiences](#)
Kaya de Barbaro and Caitlin M. Fausey

Using cameras or other audio-video recorders to capture infants' behaviors in natural settings can reveal experiences and patterns within everyday activities that shape development and that would be

impossible to capture in the laboratory. De Barbaro and Fausey review 10 lessons learned from research drawn from infants' spontaneous everyday experiences. Two lessons showcase heterogeneity in caregiving: Infants' experiences are very heterogeneous and change over developmental time, and learning experiences arise within everyday activities. Thus, human development appears to be complex and dynamic, with multiple pathways.

[Understanding Trajectories to Anxiety and Depression: Neural Responses to Errors and Rewards as Indices of Susceptibility to Stressful Life Events](#)
Anna Weinberg, Autumn Kujawa, and Anja Riesel

Individuals with heightened sensitivity to errors (e.g., misremembering someone's name, incurring social disfavor) tend to show anxiety symptoms, whereas those with dampened sensitivity to rewards (e.g., social acceptance caused by affiliating with others) tend to show depression symptoms. However, these relationships appear to be influenced by exposure to stressful life events—a strong predictor of anxiety and depression. Weinberg and colleagues review research on how exposure to stress interacts with neural responses to errors and rewards to predict the development of anxiety and depression symptoms. They also outline future research directions.

[Toward a Comparative Approach to Language Acquisition](#)
Morten H. Christiansen, Pablo Contreras Kallens, and Fabio Trecca

Christiansen and colleagues argue that understanding how children acquire different languages requires systematic comparisons between languages rather than the current emphasis on how children acquire one particular language: English. The authors propose three levels of comparison: coarse-grained comparisons of unrelated languages to confirm or refute broad theoretical claims, fine-grained comparisons between closely related languages to investigate the impact of specific factors on acquisition outcomes, and within-language comparisons targeting the impact of socio-communicative differences on learning. This comparative approach may provide new insights into the mechanisms and processes of language acquisition.

[Research Domain Criteria (RDoC): Progress and Potential](#)
Bruce N. Cuthbert

The Research Domain Criteria (RDoC) project is a response to the National Institute of Mental Health's goal of developing new ways of studying psychopathology based on dimensions of measurable behavior and related neurobiological measures. RDoC called for the study of empirically derived fundamental dimensions characterized by related behavioral/psychological and neurobiological data (e.g., reward valuation, working memory). RDoC also emphasizes approaches including neurodevelopment, environmental effects, and the full range of dimensions of interest (from typical to increasingly abnormal), as well as research designs that integrate data across behavioral, biological, and self-report measures. This article provides an overview of the RDoC's first decade and its potential future directions.

[Agency Through the We: Group-Based Control Theory](#)
Immo Fritsche

How do people maintain a sense of control when they realize their strong interdependence with other people? Why do individuals continue to act on overwhelming collective problems, such as climate change, that are beyond their personal control? Fritsche presents group-based control theory, according to which social identification with agentic groups and engagement in collective action serve to maintain and restore people's sense of control. Group-based control may enable people to act adaptively even when personal control seems futile. Supporting this theory is evidence indicating (a) increased in-group identification and group-based action intentions following reminders of low personal control and (b) increased perceived control and well-being following identification with agentic in-groups.

The Perceptual Magic of Binocular Rivalry
Randolph Blake

Binocular rivalry (BR) refers to the spontaneous, unpredictable fluctuations in visual awareness provoked by dissimilar stimulation of a person's two eyes. Reports of the phenomenon date back several centuries, but new ideas about BR have emerged, sparking controversies about its neural bases. These controversies may be resolved thanks to new methodological developments (e.g., flash suppression, EEG). This essay provides a synopsis of some key empirically determined aspects of BR as well as an overview of theoretical developments in this field. Blake mentions earlier key findings and emphasizes work published during the past decade or so.

A Grand Challenge for Psychology: Reducing the Age-Related Digital Divide
Neil Charness and Walter R. Boot

The aging population worldwide and rapid diffusion of digital technology have converged to produce an age-related digital divide in technology adoption. Reducing that gap is an important challenge for psychologists. Charness and colleagues outline more and less malleable factors associated with the adoption of technology (e.g., attitudes, education, product design, affordability) and argue for interventions that can change aging users as well as product design. Promising new approaches to reducing the age-related digital divide include adaptive technology systems that incorporate artificial intelligence and extended reality.

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