

Research Briefs

April 29, 2022



[Strength of Belief Guides Information Foraging](#)

David A. Illingworth and Rick P. Thomas
Psychological Science

This research suggests that people's beliefs and the strength of those beliefs guide the sources people seek out for additional information when making decisions. While playing a medical-diagnosis game, participants learned about diseases and symptoms by conducting different medical tests. During the learning phase, participants also created disease hypotheses whose strength could later be biased by symptoms' presentations. Later, they decided which test they wanted to use to diagnose patients. Results indicated that participants' medical-test choices were guided by changes in their beliefs about test hypotheses—a pattern known as hypothesis-guided search.

[Shuffle the Decks: Children Are Sensitive to Incidental Nonrandom Structure in a Sequential-Choice Task](#)

Alexander D. S. Breslav et al.
Psychological Science

Breslav and colleagues tested children (4–13 years old) in the Children’s Gambling Task, an age-appropriate variant of the Iowa Gambling Task, used to understand variation in risky decision-making. They found that, contrary to what would be expected, older children performed worse than younger children—but not because they failed to learn the task structure. Instead, a subgroup of the older children identified the hidden nonrandom structure in the game, leading to sophisticated patterns of decision-making. These results illustrate that changes in decision-making across early childhood reflect, in part, increasing sensitivity to environmental structure.

[Moral Frames Are Persuasive and Moralize Attitudes; Nonmoral Frames Are Persuasive and De-Moralize Attitudes](#)

Rabia I. Kodapanakkal, Mark J. Brandt, Christoph Kogler, and Ilja van Beest
Psychological Science

In three studies, Kodapanakkal and colleagues used persuasion messages (moral, nonmoral, and control) that opposed new big-data technologies such as crime-surveillance technologies and hiring algorithms. The researchers then measured participants’ support for certain attitudes, moral conviction, willingness

to compromise, compromise behavior, perception and weighing of risks and benefits, and emotional reactions. Moral frames (e.g., “New technologies can cause harm and be used to discriminate against people”) increased moralization (i.e., by providing a moral basis for attitudes) and lowered willingness to compromise, whereas nonmoral frames were more persuasive and demoralized people’s attitudes. These findings imply that using moral frames can increase and entrench moral divides instead of bridging them.

[Perturbation of Right Dorsolateral Prefrontal Cortex Makes Power Holders Less Resistant to Tempting Bribes](#)

Yang Hu et al.
Psychological Science

Hu and colleagues used transcranial direct-current stimulation (tDCS) to induce perturbation of the right dorsolateral prefrontal cortex (rDLPFC) and investigate how that changed bribe-taking decisions. Participants performed a task in which they were power holders who decided to accept or reject financial offers, including bribes from corrupt individuals. Results indicated that perturbation of the rDLPFC via tDCS made participants more willing to accept bribes as the value of the bribe increased. Further analysis indicated that this neural modulation changed the moral cost of generating profits for oneself by taking bribes, suggesting a possible neurobiological root of corruption.

[Behavioral Consistency in the Digital Age](#)

Heather Shaw, Paul J. Taylor, David A. Ellis, and Stacey M. Conchie
Psychological Science

Individuals show distinctive patterns of digital behavior that can make them easily identifiable, posing threats to security and privacy, this research suggests. Shaw and colleagues analyzed 28,692 days of smartphone app usage across 780 individuals and found that each individual’s app usage (pickup

frequency and usage duration) was consistent over the days, allowing the creation of profiles. When trained models generated their top 10 predictions of who possible users were, based on app usage, the actual user was on the list about 75% of the time. That is, anonymous data can become identifiable by being matched to actual users' profiles.

[The Effect of COVID-19 Lockdowns on Maternal Mental Health and Parenting Practices Moderated by Urban Green Space](#)

Marigen Narea et al.

Clinical Psychological Science

Narea and colleagues studied the impact of COVID-19 lockdowns on maternal mental health and parenting practices, along with the extent to which green space could be a protective factor in that relationship. They used longitudinal georeferenced data for 985 families (mothers and 24- to 30-month-olds) in Chile. On average, the researchers did not find an overall association between lockdown duration and maternal mental health or parenting practices. However, the data were heterogeneous: Lockdown duration increased dysfunctional parent-child interactions for mothers with little access to green space but not for mothers who lived close to green space. This effect was mainly driven by mothers who lived close to green space and did not comply with the lockdown mandate.

[Parental Mentalizing During a Pandemic: Use of Mental-State Language on Parenting Social Media Before and During the COVID-19 Pandemic](#)

Tal Yatziv, Almog Simchon, Nicholas Manco, Michael Gilead, and Helena J. V. Rutherford

Clinical Psychological Science

Yatziv and colleagues compared parenting-related posts on Reddit from two time periods during the early months of the COVID-19 pandemic, March to April 2020 (lockdown) and July to August 2020 (postlockdown), with posts from time-matched control periods in 2019, before the COVID-19 pandemic. They used the content of these posts to measure parents' ability to mentalize (i.e., understand mental states that underlie behavior). Results indicated that parental mentalization content decreased during the pandemic: Posts referred less to mental activities or other people in 2020 and showed decreased self-references and affective and cognitive mental-state language, specifically during lockdown. This effect occurred more in father-specific subreddits than in mother-specific subreddits. These findings suggest that mentalizing may be compromised under stressful caregiving contexts.

[Continuities and Discontinuities in the Cognitive Mechanisms Associated With Clinical and Nonclinical Auditory Verbal Hallucinations](#)

Peter Moseley et al.

Clinical Psychological Science

Moseley and colleagues tested how individuals with and without auditory verbal hallucinations (AVHs) performed different cognitive tasks. Within the group of voice hearers, they compared two groups of participants: those with psychosis and those without any need for care (nonclinical voice hearers [NCVHs]) who reported hearing spiritual voices. Compared with non-voice-hearers, voice hearers with psychosis showed atypical performance on auditory signal detection, dichotic listening, and memory-inhibition tasks but intact performance on a source-monitoring task. NCVHs showed only atypical signal detection. These findings suggest that clinical and nonclinical individuals with AVHs may differ in terms of attentional control and inhibition of intrusions.

[Toward a Comparative Approach to Language Acquisition](#)

Morten H. Christiansen, Pablo Contreras Kallens, and Fabio Trecca
Current Directions in Psychological Science

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 of 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.

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

Glen Coppersmith
Current Directions in Psychological Science

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 in which 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.

[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
Current Directions in Psychological Science

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 both 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.

[Personality Change Through Digital-Coaching Interventions](#)

Mathias Allemand and Christoph Flückiger
Current Directions in Psychological Science

By definition, personality traits are relatively stable, but recent research has begun to investigate whether individuals can intentionally change their personalities. One intervention that might lead to personality change relies on the use of digital applications to coach people on achieving their desired personality change. Allemand and Flückiger provide a rationale for nonclinical personality-change interventions, noting that personality traits predict several life outcomes, personality change can lead to better health, and many studies have already indicated that personality traits are malleable. The researchers also discuss motivations to change and the possible use of digital applications to foster change.

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[Where's My Consciousness-Ometer? How to Test for the Presence and Complexity of Consciousness](#)

Tam Hunt, Marissa Ericson, and Jonathan Schooler
Perspectives on Psychological Science

How can researchers measure whether a person, animal, or anything is actually conscious? Can researchers create an informative “consciousness-ometer”? Hunt and colleagues examine and label several categories of tests for making reasonable inferences about the presence and complexity of consciousness (defined as the capacity for phenomenal/subjective experience). These tests measure three different correlates of consciousness: neural, behavioral, and creative. They also suggest ways in which different theories of consciousness may be empirically distinguished and how the scientific process may inform broader philosophical views about consciousness.

[A Psychology of Ideology: Unpacking the Psychological Structure of Ideological Thinking](#)

Leor Zmigrod

Perspectives on Psychological Science

Zmigrod argues that the psychological study of ideology must consider the nature of ideological cognition across different ideologies rather than focusing on the content of ideological beliefs (e.g., political, religious, or moral) separately. He proposes a multidimensional framework of ideological thinking that can be conceptualized as rigidly adherent to a doctrine and resistant to evidence-based updating. Ideology also tends to be favorable toward in-groups and antagonistic to out-groups. In his framework, Zmigrod emphasizes conceptual precision, methodological directions, and interdisciplinary integration across the political and cognitive sciences.

[Outside the “Cultural Binary”: Understanding Why Latin American Collectivist Societies Foster Independent Selves](#)

Kuba Kryś, Vivian L. Vignoles, Igor de Almeida, and Yukiko Uchida

Perspectives on Psychological Science

Kryś and colleagues argue for the revision of views linking collectivist values with interdependent self-construal (i.e., people construe themselves in relation to others by fitting in and seeking harmonious interdependence). The researchers draw on the example of Latin American societies that emphasize collectivist values as strongly as East Asian societies but also accentuate forms of independent self-construal as strongly as Western societies. Kryś and colleagues explain this apparent anomalous evidence on the basis of differences in modes of subsistence, colonial histories, cultural heterogeneity, religious heritage, and societal organization. Their conclusions suggest the need to pay more attention to global cultures beyond “the West” and East Asia.

[Toward a Psychology of Consent](#)

Vanessa K. Bohns

Perspectives on Psychological Science

Bohns argues that psychologists should embrace consent—in particular, the subjective experience of consent—as a core topic of study. Although domain-specific research on consent—most commonly, informed consent and sexual consent—is regularly published in specialty journals (e.g., methods and sex-research journals), consent has been largely ignored as a psychological phenomenon, Bohns says. This omission is particularly striking given that psychologists have paid broad attention to related constructs, such as compliance, obedience, persuasion, free will, and autonomy, and that scholars in other fields, such as law and philosophy, have paid attention to the topic of consent.

[A Conceptual Framework for Investigating and Mitigating Machine-Learning Measurement Bias \(MLMB\) in Psychological Assessment](#)

Louis Tay, Sang Eun Woo, Louis Hickman, Brandon M. Booth, and Sidney D’Mello
Advances in Methods and Practices on Psychological Science

Machine-learning measurement bias (MLMB) can occur when a trained machine-learning model produces different predicted scores or score accuracy for different subgroups (e.g., race, gender) despite examining the same levels of the underlying construct (e.g., personality) in those groups. Both biased data and algorithms can be the sources of MLMB. Tay and colleagues explain how these potential sources of bias may manifest and develop some ideas about how to mitigate them. The authors also highlight the need to develop new statistical procedures and algorithms and put forward a framework for clarifying, investigating, and mitigating these complex biases.

[PsyBuilder: An Open-Source, Cross-Platform Graphical Experiment Builder for Psychtoolbox With Built-In Performance Optimization](#)

Zhicheng Lin, Zhe Yang, Chengzhi Feng, and Yang Zhang
Advances in Methods and Practices on Psychological Science

In this tutorial, Lin and colleagues present the general-purpose graphical experiment builder—PsyBuilder—that they developed for Psychtoolbox, an open-source software package for stimulus presentation and response collection that otherwise requires coding. With PsyBuilder, both new and experienced users can graphically implement sophisticated experimental tasks through intuitive drag and drop without the need to write code. PsyBuilder’s output codes have built-in optimized timing precision and come with detailed comments to facilitate customization. Lin and colleagues describe the PsyBuilder interface and walk the reader through the graphical building process using a concrete experiment.

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