Research Briefs

October 26, 2021

[Aging Impairs Inhibitory Control Over Incidental Cues: A Construal-Level Perspective](#)

Liat Hadar, Yaacov Trope, and Boaz M. Ben-David

Older adults' purchasing decisions appear to be more influenced by peripheral product features than by central and goal-relevant features, this research indicates. Compared with older adults, younger adults were more willing to pay more for a product with superior central, desirable attributes (e.g., a coffee maker able to brew a variety of coffee types) than a product with superior peripheral, feasible attributes

(e.g., a coffee maker that is easy to use and reliable). Younger adults were also more satisfied after completing a high-desirability/low-feasibility task than a low-desirability/high-feasibility task and after experiencing a goal-relevant product than a goal-irrelevant product.

Disproportionate School Punishment and Significant Life Outcomes: A Prospective Analysis of Black Youths

Edith Chen et al.

Psychological Science

Black individuals with higher self-control who attend schools that disproportionately punish Black students may be more academically oriented in late adolescence and have better adult life outcomes at the cost of physical health, this study suggests. In an 18-year longitudinal study, Chen and colleagues tracked Black youths from age 11 to age 29. They found that individuals with higher self-control and, consequently, higher academic orientation who attended schools that disproportionately punished Black students completed more schooling, had higher incomes, and exhibited better mental health in adulthood than their counterparts with lower self-control. However, these same individuals were also more likely to develop adult insulin resistance, which is related to cardiometabolic disease.

Anger Damns the Innocent

Katherine A. DeCelles, Gabrielle S. Adams, Holly S. Howe, and Leslie K. John

Psychological Science

Angrily denying an accusation might lead other people to perceive guilt, this research indicates. DeCelles and colleagues examined how people use anger as a signal of guilt in different types of accusations (e.g., serious vs. trivial, physically aggressive vs. not physically aggressive) and contexts (e.g., more formal vs. less formal). They found that online panelists as well as professionals such as fraud investigators use suspects' angry responses to accusations as cues of guilt. In reality, anger is a cue of innocence rather than guilt; accused individuals are angrier when they are falsely accused than when they are guilty.

Do People Prescribe Optimism, Overoptimism, or Neither?

Jane E. Miller, Inkyung Park, Andrew R. Smith, and Paul D. Windschitl

Psychological Science

People generally recommend that others feel optimistic about desirable events but not overestimate the likelihood of those events. Participants read scenarios about protagonists facing uncertain events with a

desired outcome (e.g., winning an award) and indicated whether the protagonist should be optimistic or pessimistic about the event and how likely the protagonist should expect the positive outcome to be. Participants endorsed optimism but did not recommend overestimating the likelihood of desirable outcomes. These results suggest that how people are asked about optimism affects their response and that they do not tend to endorse biased optimism.

Nonsymbolic-Magnitude Deficit in Adults With Developmental Dyscalculia: Evidence of Impaired Size Discrimination but Intact Size Constancy

Nirit Fooks, Bat-Sheva Hadad, and Orly Rubinsten

Psychological Science

Adults with developmental dyscalculia (DD; a learning disability affecting the acquisition of arithmetic skills) show impairments in size discrimination but intact size consistency even when visual depth cues may alter the perceived distances to objects, this research suggests. Adults with DD and typically developing adults chose which of two spheres, accompanied by visual depth cues, was the largest. Compared with typically developing adults, adults with DD were less sensitive to subtle differences in sphere size but showed stable size representations despite variations in perceived distances, indicating that a core deficit in the mental representation of nonsymbolic magnitude may underlie DD.

Inferences Training Affects Memory, Rumination, and Mood

Baruch Perlman et al.

Clinical Psychological Science

Perlman and colleagues used a cognitive-bias modification procedure to train participants to make causal inferences. Participants imagined themselves as the main character in negative social, academic, and occupational scenarios; each scenario was accompanied by a positive or negative causal inference. When asked to make inferences for new negative scenarios, participants made inferences that reflected their positive or negative training. Participants also confabulated memories about the inferences congruent with their training valence. Training had immediate effects on negative mood and rumination, but not after the recall of autobiographical memories. In participants with high levels of depression, training influenced inferences about autobiographical memories.

Influences of Caregiving on Development: A Sensitive Period for Biological Embedding of Predictability and Safety Cues

Dylan G. Gee and Emily M. Cohodes

Gee and Cohodes present evidence for a sensitive period during infancy and toddlerhood when caregiver inputs that are predictable and associated with safety may become biologically embedded, influencing the developing children's corticolimbic circuit involved in emotion regulation. The researchers propose that these early caregiver inputs make the corticolimbic circuit more receptive to later caregiver influences, including caregivers' external regulation of the child's emotions. When children experience early adversity that disrupts the predictability and safety associated with caregivers during the sensitive period, caregivers' influence on their neural and behavioral development might be diminished.

[Defining and Measuring Meditation-Related Adverse Effects in Mindfulness-Based Programs](#)

Willoughby B. Britton, Jared R. Lindahl, David J. Cooper, Nicholas K. Canby, and Roman Palitsky

Mindfulness-based programs use meditation and other mindfulness techniques to treat psychological issues, such as stress or depression, but do these programs also have adverse effects? Britton and colleagues measured meditation-related side effects following three variants of an 8-week program of mindfulness-based cognitive therapy. Results indicated that 58% of participants experienced meditation-related adverse effects, and 37% reported that the adverse effects had negative impacts on their daily functioning. Lasting bad effects occurred in 6% to 14% of participants and were consistent with signs of dysregulated arousal (e.g., insomnia, anxiety, and dissociation).

[Extending Expectancy Theory to Food Intake: Effect of a Simulated Fast-Food Restaurant on Highly and Minimally Processed Food Expectancies](#)

Jenna R. Cummings et al.

Reducing the positive emotions that individuals might expect to get from eating highly processed foods may improve dietary choices, this research suggests. Participants entered a simulated fast-food restaurant or a neutral office space; completed questionnaires about anticipated emotional effects of food; and performed a bogus taste test of chips, cookies, carrots, and grapes. Afterward, they were left alone to

help themselves to any remaining food. Compared with participants in the neutral space, those in the fast-food restaurant had more positive expectancies for highly processed food, which led them to eat more chips and cookies than minimally processed foods such as carrots and grapes.

Decomposing the Motivation to Exert Mental Effort

Amitai Shenhav, Mahalia Prater Fahey, and Ivan Grahek

Current Directions in Psychological Science

Achieving goals and completing tasks tend to require mental effort, something that people have varying motivation to exert. Shenhav and colleagues describe efforts to understand what determines motivation using the expected-value-of-control (EVC) model. This model simulates the process people use to weigh the costs and benefits of exerting mental effort, which, in turn, informs their motivation to exert a certain amount of mental effort. The EVC can predict different sources of variability in motivation, such as past experiences or perceptions of performance efficacy shaped by one's environment, among others.

Three Perceptual Tools for Seeing and Understanding Visualized Data

Steven L. Franconeri

Current Directions in Psychological Science

Franconeri examines how people use their visual system to process data visualizations and extract patterns and relationships from figures and graphics depicting data. He argues that viewers use at least three core perceptual tools to see and understand data visualizations— extraction of statistics, extraction of shapes, and comparisons—and that the selection of each tool can influence which patterns the viewers see and how they understand them. Franconeri explains each tool's strengths and weaknesses and proposes that a better understanding of these tools may lead to the design of more effective data visualizations.

Individual Differences in the Intensity and Consistency of Attention

Nash Unsworth and Ashley L. Miller

Unsworth and Miller suggest that attention intensity (the amount of attention allocated to a task) and attention consistency (how consistently attention is allocated to a task) are important aspects for how attentional abilities vary among people. They review evidence for how intensity and consistency are related to each other and influence task performance. They also show how several factors, such as arousal or motivation, can lead to variations in intensity and consistency, which, in turn, help to explain variation in working memory, learning, and control.

Nudgeability: Mapping Conditions of Susceptibility to Nudge Influence

Denise de Ridder, Floor Kroese, and Laurens van Gestel

Nudges are interventions that steer individuals to change their behaviors and choose desirable options. But how susceptible are people to the influence of nudges? de Ridder and colleagues call this concept nudgeability
and synthesize the evidence of the conditions that affect people's susceptibility to nudges. Neither a nudge's transparency nor how someone thinks about it appears to influence nudgeability (i.e., it makes no difference whether nudges are more or less hidden or if people are in irrational modes of thinking). However, personal preferences do appear to affect nudgeability, and people cannot be nudged into something they do not want to do.

Illusory Essences: A Bias Holding Back Theorizing in Psychological Science

C. Brick, B. Hood, V. Ekroll, and L. de-Wit

Brick and colleagues suggest that there might be a pervasive bias in most psychological science fields—the assumption that essences explain psychological phenomena—that might prevent theoretical progress. They theorize that psychological concepts (e.g., intelligence) are assumed to represent definable categories with an underlying essence that can create the illusion of understanding. Brick and colleagues suggest four strategies for avoiding essentialism in theory development: (a) transparently discuss what is known about mechanisms, (b) evaluate contextual and contingent explanations, (c) explicitly test phenomena for a common underlying cause, and (d) consider using unfamiliar words as construct labels.

Personality Change Through Arts Education: A Review and Call for Further Research

Michael P. Grosz, Julia M. Lemp, Beatrice Rammstedt, and Clemens M. Lechner

Grosz and colleagues reviewed the literature on how arts education affects personality change. Evidence from the 36 studies examined suggested that arts-education programs may foster extraversion and conscientiousness but not self-esteem. These effects appeared to be stronger in early and middle childhood than in preadolescence and adolescence. However, when analyzing only true experiments, the evidence of arts education's effects on personality was very limited. Given the heterogeneity of studies and the mixed findings, the current evidence is inconclusive. The authors suggest that more research on arts education and personality change is needed.

A Signal Detection Approach to Understanding the Identification of Fake

News

Cédric Batailler, Skylar M. Brannon, Paul E. Teas, and Bertram Gawronski

Perspectives on Psychological Science

Batailler and colleagues discuss how signal detection theory (SDT) can help with understanding and disentangling two different aspects in the identification of fake news: the ability to distinguish between real news and fake news, measured by a discrimination parameter (d'), and response biases to judge news as real or fake regardless of news veracity, measured by a criterion parameter (c). The researchers reanalyzed existing data sets to illustrate the use of SDT in fake-news research and deliver insights into how partisan bias, cognitive reflection, and prior exposure influence discrimination and bias in the identification of fake news.

Summary Plots With Adjusted Error Bars: The *superb* Framework With an Implementation in R

Denis Cousineau, Marc-André Goulet, and Bradley Harding

Advances in Methods and Practices in Psychological Science

In figures showing data, error bars conveying confidence intervals provide limited information about the precision of estimated results. For instance, confidence intervals do not allow the reader to compare results between groups, between repeated measures, when participants are clustered, and when the population size is finite. Thus, inferences from such error bars can be at odds with conclusions derived from statistical tests. Here, Cousineau and colleagues propose adjusting confidence intervals so that they reflect the experimental design and sampling strategy used. To facilitate the creation of plots with error bars reflecting the adjustments, the researchers developed *superb*, an open-source library for R.

A Primer on Bayesian Model-Averaged Meta-Analysis

Quentin F. Gronau, Daniel W. Heck, Sophie W. Berkhout, Julia M. Haaf, and Eric-Jan Wagenmakers

Perspectives on Psychological Science

Gronau and colleagues discuss an alternative to frequentist meta-analysis—Bayesian model-averaged meta-analysis. In Bayesian model-averaged meta-analysis, researchers combine the results of four Bayesian meta-analysis models: fixed-effect null hypothesis, fixed-effect alternative hypothesis, random-effects null hypothesis, and random-effects alternative hypothesis. Given the data, each of these models has different plausibilities to address whether the overall effect is different from zero and whether there is between-study variability in effect size. By combining the models according to these plausibilities,

Bayesian model-averaged meta-analysis takes into account model uncertainty and avoids the need to select a fixed-effect or a random-effects model.

Feedback on this article? Email apsobserver@psychologicalscience.org or scroll down to comment.