

# Research Briefs

October 31, 2022



*Research Briefs features summaries of selected articles published recently in [APS's six journals](#). APS members receive weekly summaries of all new journal articles through the This Week in Psychological Science newsletter.*

## **[Flavor Sensing in Utero and Emerging Discriminative Behaviors in the Human Fetus](#)**

**Beyza Ustun, Nadja Reissland, Judith Covey, Benoist Schaal, and Jacqueline Blissett**  
*Psychological Science*

Fetuses react with different facial expressions to different flavors of the foods their mothers eat, this research suggests. Ustun and colleagues used 4D ultrasound scans at 32 and 36 weeks' gestation to examine fetuses' reactions after their mothers swallowed a vegetable capsule of either carrot or kale. When the fetuses were exposed to carrot flavor, they were more likely to show "laughter-face" reactions, and when they were exposed to kale flavor, they were more likely to show "cry-face" reactions. The researchers also found that facial responses to flavors became more complex as fetuses

matured.

## **Feeling Good Is Feeling Better**

**Alberto Prati and Claudia Senik**

### *Psychological Science*

People do not appear to remember their past happiness accurately. Prati and Senik analyzed data from four longitudinal surveys spanning the 1970s to the present in which more than 60,000 adults in the United States, France, the United Kingdom, and Germany evaluated their current and past life satisfaction. Happy people in the present recalled the evolution of their life to be better than it was, whereas unhappy people tended to exaggerate their life's negative evolution. It thus seems that feeling happy today simply implies feeling better than yesterday. These findings could explain why happy people are more optimistic.

## **Spatial Representations Without Spatial Computations**

**Daniele Gatti, Marco Marelli, Tomaso Vecchi, and Luca Rinaldi**

### *Psychological Science*

How do people learn and represent geographical information? Gatti and colleagues challenge the conventional view—that visual experience is the foundation for the formation of mental maps—by showing that language can also encode and reproduce maps. They show that psychologically plausible computational models can derive geographical information from written texts alone, reproducing the spatial layout of real-world maps. In two behavioral experiments, they further found that these language-based maps reliably resemble how humans represent geographical information. These findings call into question the claim that sensorimotor experience is the key ingredient in the formation of mental maps.

## **Underestimating Counterparts' Learning Goals Impairs Conflictual Conversations**

**Hanne K. Collins, Charles A. Dorison, Francesca Gino, and Julia A. Minson**

### *Psychological Science*

Expressing willingness to learn about each other might improve communication between people holding opposing views. Across seven studies, participants consistently underestimated how willing their disagreeing counterparts were to learn about opposing views. However, participants did not underestimate their own willingness to learn or how willing others who share the same views would be. This belief predicted greater derogation of attitude opponents and more negative expectations for conflictual conversations. In both American partisan politics and the Israeli-Palestinian conflict, a short informational intervention increased beliefs that disagreeing counterparts were willing to learn about the others' views. This decreased derogation and increased willingness to engage in the future.

## **Opportunity Neglect: An Aversion to Low-Probability Gains**

**Emily Prinsloo, Kate Barasz, Leslie K. John, and Michael I. Norton**

### *Psychological Science*

Opportunity neglect may occur when people forgo low-probability opportunities (e.g., applying to a highly prestigious company or university) even in the absence of objective costs (e.g., free and quick applications). Prinsloo and colleagues show opportunity neglect in naturalistic situations, including applying for jobs and winning consumer products, and in gambles for both goods and money with positive expected value, even with no possibility of monetary loss and nontrivial rewards (e.g., a 1% chance at \$99). One way to reduce opportunity neglect is to remind people that they have nothing to

lose—highlighting that rejecting an opportunity is equivalent to choosing a zero probability of success.

## **What You See Is What You Hear: Sounds Alter the Contents of Visual Perception**

**Jamal R. Williams, Yuri A. Markov, Natalia A. Tiurina, and Viola S. Störmer**

### *Psychological Science*

What people hear impacts how they perceive the visual world, this research suggests. Using a task in which ambiguous images (e.g., an image that could be a cat or a kettle) were paired with naturalistic sounds, Williams and colleagues found that participants' representations of the images shifted toward the visual features of the object related to the sound (e.g., they were more likely to perceive the same image as a cat if they heard a meow or as a kettle if they heard a whistle). These effects were driven by continuous integration of audiovisual inputs during perception itself rather than decision or response biases or expectations.

## **Face-Information Sampling in Super-Recognizers**

**James D. Dunn et al.**

### *Psychological Science*

Super-recognizers have exceptional face-recognition abilities. Dunn and colleagues compared visual sampling of super-recognizers with that of typical viewers by measuring participants' gaze position as they learned and recognized unfamiliar faces. Using eye-tracking, the researchers created "spotlight" apertures that revealed only part of the unfamiliar faces. Super-recognizers performed better than average people at all aperture sizes. They also made more fixations (i.e., stopped scanning and held their central vision to take in detailed information more often), focused less on the eye region, and distributed their gaze more than typical viewers. This indicates that face-recognition ability cannot be explained by

holistic information (i.e., whole-face) sampling. Moreover, differences were most apparent when participants were learning faces, which suggests that super-recognizers might better be thought of as “super-learners.”

## **How to Change Negative Outcome Expectations in Psychotherapy? The Role of the Therapist’s Warmth and Competence**

**Anna Seewald and Winfried Rief**

### *Clinical Psychological Science*

A therapist’s warmth and competence might overcome a patient’s negative outcome expectations for psychological treatments and thus lead to favorable treatment outcomes, this research suggests. Seewald and Rief investigated how a therapist’s interpersonal behavior can optimize the modification of negative outcome expectations. After inducing negative expectations in an online experiment, they presented different videos of therapist-patient interactions to violate those expectations. In the videos, the researchers kept the information constant but manipulated the therapist’s warmth and competence. Results indicated that the therapist being both warm and competent led to the most positive outcome expectations.

## **Electrodermal Activity and Heart Rate Variability During Exposure Fear Scripts Predict Trait-Level and Momentary Social Anxiety and Eating-Disorder Symptoms in an Analogue Sample**

**Caroline Christian, Elizabeth Cash, Dan A. Cohen, Christopher M. Trombley, and Cheri A. Levinson**

### *Clinical Psychological Science*

Eating disorders (EDs) and social anxiety disorder (SAD), characterized by high levels of fear, are treated with exposure therapy (i.e., exposing the patient to the source of their fear). To test how physiological markers of fear can signal how exposure influences symptoms, Christian and colleagues

measured heart rate variability, heart rate, and electrodermal activity (EDA) using wearable sensor technology while participants listened to ED fear, SAD fear, and neutral scripts. Results indicated that the most salient predictor of ED and SAD symptoms was EDA when patients listened to the neutral script. This research highlights the utility of wearable sensor technology as a complement to exposure therapy.

## **Psychological Distress Across Adulthood: Equating Scales in Three British Birth Cohorts**

**Hannah E. Jongsma et al.**

### *Clinical Psychological Science*

To examine psychological distress across adulthood and cross-cohort trends, Jongsma and colleagues used data from the psychological-distress measures administered in the 1946, 1958, and 1970 British birth cohorts. The researchers equated the scales (i.e., created a common score for the different measures used) using information from an independently recruited calibration sample and different methods. Results indicated an inverse U shape of distress across adulthood. However, different measures and methods appeared to introduce differences in point estimates, particularly for comparisons between cohorts, preventing clear conclusions regarding between-cohorts trends. Further analyses suggested that, to equate the scales, the method of multiple imputation yielded more accurate estimates than equipercentile linking.

## **Studying Mental Health Problems as Systems, Not Syndromes**

**Eiko I. Fried**

### *Current Directions in Psychological Science*

Fried discusses two barriers that have contributed to a problematic oversimplification of mental illness: diagnostic literalism, mistaking complex mental health problems for the simplified diagnoses by which they are classified; and reductionism, the isolated study of individual elements of mental disorders. The author proposes conceptualizing people's mental health states as emerging from complex systems of biological, psychological, and social elements and shows how this perspective explains phenomena such

as variability within diagnoses, comorbidity among diagnoses, and transdiagnostic risk factors. This systems approach may help researchers understand diagnoses and reductionism as useful epistemological tools for describing the world, rather than ontological convictions about how the world is.

## **Social Psychological Research on Racism and the Importance of Historical Context: Implications for Policy**

**Sophie Trawalter, Gerald D. Higginbotham, and Kyshia Henderson**

*Current Directions in Psychological Science*

Trawalter and colleagues suggest that psychology must acknowledge historical and systemic racism and offer guidance for how. They highlight that in the context of intergroup relations, and the study of racism specifically, the tight focus on mind and behavior has meant an incomplete understanding of racism. The researchers summarize a long-standing but oft-neglected critique that psychology, by neglecting historical and systemic racism, offers incomplete and sometimes harmful solutions to redressing it. They discuss four examples of research that connect psychology to history and might lead the way to better solutions.

## **Exceptional Abilities in Autism: Theories and Open Questions**

**Lucina Q. Uddin**

*Current Directions in Psychological Science*

A small but significant portion of individuals diagnosed with autism spectrum disorder (ASD) exhibit exceptional cognitive abilities in one or more domains, making them twice-exceptional individuals—that is, those who present exceptional cognitive strengths in one domain coupled with profound deficits in another (i.e., cognitive divergence). Uddin reviews the current literature on cognitive divergence in ASD, focusing on cognitive theories, neural substrates, and clinical and societal implications. The author suggests that future research identify predictors of and contributors to successful social, academic, and occupational trajectories for these individuals, as well as the neural correlates of cognitive divergence in ASD.

## **Work Identity and Future Research on Work as a Calling**

**Americus Reed, II, Samuel Jones, and Bryan J. Dik**

*Current Directions in Psychological Science*

People who view their work as a calling they can actively live out usually experience both career-related and general well-being. Reed and colleagues propose a cognitive framework for constructing a sense of work as calling. This approach builds on four key work-identity precursors: effort calculation (i.e., evaluating the effort needed to produce high-quality work outputs), reflection on one's work-related skills and engagement in self-development, appraisal of one's work through the eyes of others, and fusion (i.e., the belief that one's work is an extension of oneself). These processes may illuminate how people come to perceive a calling.

## **Recommendations for Investigating the Cross-Category Effect Among**

## **Hispanic and Latino Populations**

**Jennifer L. Rennels**

*Perspectives on Psychological Science*

Hispanic or Latino individuals are underrepresented as both participants and stimuli in face-perception literature. The most studied face-perception topic with Hispanic or Latino individuals is cross-category effects, but this empirical knowledge should be expanded via culturally relevant considerations. Rennels describes (a) errors individuals display when categorizing target faces, (b) how social status influences identity and cross-category effects, (c) the potential impact of flexible and heterogeneous social identities on face processing, (d) a critical need for more developmental research, and (e) methodological expansions and generalizability concerns. The author proposes directions for future studies to advance knowledge in the field.

## **How We Get Free: Graduate Training as an Opportunity for Equitable Participation and Liberation**

**Vanessa V. Volpe et al.**

*Perspectives on Psychological Science*

Volpe and colleagues assert that psychology should adopt the explicit goal of liberating people oppressed by society rather than striving for mere equality. Achieving such a transformation would require reenvisioning graduate training in psychology. They propose six pillars for liberation-focused graduate training in psychology: critical unlearning/ unknowing, cooperative modes of production, prioritizing indigenous knowledge, embedded interdependence, systems-level action, and prioritizing members of oppressed groups. Although this conceptualization may engender resistance, the authors argue that there are many potential pathways by which graduate training could use liberation psychology to work equitably with oppressed groups to seek justice.

## **Awe as a Pathway to Mental and Physical Health**

**Maria Monroy and Dacher Keltner**

*Perspectives on Psychological Science*

How do experiences in nature, in spiritual contemplation, or in being moved by music or with psychedelics promote mental and physical health? Through awe, according to Monroy and Keltner. They review recent advances in the scientific study of awe, an emotion often considered ineffable and beyond measurement. Awe engages five processes that benefit well-being—shifts in neurophysiology, a diminished focus on the self, increased prosocial relationality, greater social integration, and a heightened sense of meaning. The authors also describe how experiences of awe strengthen the mind and body.

## **A Causal Framework for Cross-Cultural Generalizability**

**Dominik Deffner, Julia M. Rohrer, and Richard McElreath**

*Advances in Methods and Practices in Psychological Science*

Researchers increasingly recognize the need for more diverse samples that capture the breadth of human

experience. Current attempts to establish generalizability across populations focus on threats to validity, constraints on generalization, and the accumulation of large, cross-cultural data sets. However, Deffner and colleagues argue that continued progress requires a framework that helps researchers determine which inferences can be drawn and then make informative cross-cultural comparisons. They describe a generative causal-modeling framework and outline criteria to derive analytic strategies and implied generalizations. They also demonstrate how to apply the framework, using both simulated and real data.

## **Adjusting for Publication Bias in JASP and R: Selection Models, PET-PEESE, and Robust Bayesian Meta-Analysis**

**František Bartoš, Maximilian Maier, Daniel S. Quintana, and Eric-Jan Wagenmakers**

### *Advances in Methods and Practices in Psychological Science*

In this tutorial, Bartoš and colleagues demonstrate how to both conduct a publication-bias-adjusted meta-analysis in JASP and R and interpret the results. They explain two frequentist bias-correction methods: precision-effect test and precision-effect estimate with standard errors (PET-PEESE) and selection models. They then introduce robust Bayesian meta-analysis, a Bayesian approach that simultaneously considers both PET-PEESE and selection models. Bartoš and colleagues illustrate the methodology on an example data set, provide an instructional video (<https://bit.ly/pubbias>) and an R-markdown script (<https://osf.io/uhaew/>), and discuss the interpretation of results. Finally, the researchers include concrete guidance on reporting the meta-analytic results in an academic article.

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