

Observer

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Mastering Motivation

Psychological Science Explores
What Keeps Us Engaged at Work

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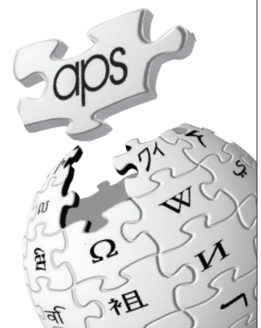


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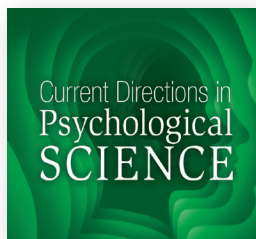
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The Publication Arms Race

Pychological science today is locked in an arms race: a heated competition for superiority and status. This competition is not fought with weapons, material wealth, or even truth. It's fought in publications.

Published papers have always served two purposes in the economy of scientific inquiry: They convey knowledge, but they're also the currency that buys you status and a successful scientific career. We are hired, paid, and promoted largely on the basis of the papers we publish — not just their content but also their quantity (Lawrence, 2007). Of course, there are other metrics for success — grants, invited addresses and lectures, and so on — but publications are the primary currency of scientific distinction and standing.

Over the past several decades, the publication arms race has accelerated (Bornmann & Mutz, 2015). When I started my career almost 30 years ago, a few peer-reviewed publications could secure an academic job at a storied institution. Two or three peer-reviewed publications per year all but guaranteed tenure in the US and Canada (my colleagues tell me the situation was similar in Europe and Asia). Today, a tenure-worthy CV from 20 years ago might get you an assistant professorship (and at top institutions, it better include at least one publication in *Science*, *Nature* or maybe *PNAS*). A CV that used to get you a job now makes you competitive for a postdoctoral fellowship. Hell, some of my colleagues won't even accept a student for graduate training without peer-reviewed publications in hand.

It's long been known that incentive structures that favor quantity over quality, status over substance, are a risk to the progress and integrity of science (Edwards & Roy, 2017; Geman & Geman, 2016). Albert Einstein famously noted: "An academic career in which a person is forced to produce scientific writings in great amounts creates a danger of intellectual superficiality" (Isaacson, 2008, p. 79). Take a moment and consider your own publication record: How much of what you have published so far stands the test of time? How much truly chips away at psychology's greatest mysteries and challenges?

Our incentive structure is also a risk to intellectual freedom (Barrett, 1998). We miss opportunities for discovery every time we're pressured to conform to the prevailing wisdom rather than innovate and risk failure. Does the publication arms race create curious adventurers in the great unknown, or are we more like



Lisa Feldman Barrett
APS President

government contractors, racing to secure enough funding to support our laboratories?

These issues are deeply personal for me because my students, postdoctoral fellows, and younger colleagues face the same struggles and constraints. This is not the scientific culture I want to leave them with.

Before I make my next point, which focuses on the plight of young psychological scientists, I want it understood that I completely and unambiguously support efforts to tidy up our scientific practices. I am 100% in favor of having large, representative samples with sufficient power to test hypotheses. And I think published papers should include multiple studies (where possible) — preregistered of course — and those studies should replicate one another. These requirements are necessary for valid scientific practice. But these requirements, in the context of the publication arms race, further tighten the screws on our young scientists.

Consider the freshly minted assistant professor, building her first lab: To command the respect of her peers and eventually earn tenure, she must do more than resist the lure of *p*-hacking together a bunch of low-*n*-studies to produce valid scientific results. She is expected to publish five to 10 papers a year, *each of which* should contain several studies of large, samples from countries not considered Western, educated, industrialized, rich, and democratic (WEIRD). Imagine the number of experiments she'd have to run to achieve this outcome — not to mention the hours designing tasks, managing students and staff, analyzing data, and so on. Think about how hard it is to secure sufficient grant funding for even a couple of innovative studies, particularly for someone at the start of her career.

APS President **Lisa Feldman Barrett** is a University Distinguished Professor of Psychology at Northeastern University, with appointments at Harvard Medical School and Massachusetts General Hospital. Her research focuses on human emotions and how they are constructed. She is the author of the book *How Emotions Are Made: The Secret Life of the Brain* and is a recipient of the APS Mentor Award, the National Institutes of Health Director's Pioneer Award, and a 2019 Guggenheim Fellowship. Feldman Barrett can be contacted at lfeldmanbarrett@psychologicalscience.org.

This catch-22 is enough to make young scientists leave the field before they even get started — which they do in increasing numbers (Gould, 2015; Anonymous Academic, 2018). It's enough to make undergraduate students question whether they want to pursue a PhD in the first place — which they question with increasing frequency. To be honest, if I were a young scientist today, I would seriously consider investing my time and energy elsewhere.

The publication arms race is a result of cultural inheritance — scientists are trained with a set of norms, values, and practices that they pass on to their students, who then pass it on in turn (Smaldino & McElreath, 2016). A few bad apples may have deliberately published junk to get tenure, but most of the scientists who helped create the arms race did so unwittingly or unwillingly. What happens next is up to us. Sometimes we're responsible for fixing things not because we're to blame but because we're the only ones who can.

How can we change the incentive structure in psychological science? It seems a task of Herculean proportions, with consequences that stretch beyond the internal workings of our science (i.e., how we hire, evaluate, promote, and fund ourselves) to the larger scientific landscape. We've faced onerous challenges before, most recently the replication crisis and its aftermath. Psychological science led the charge on that one, turning lemons into lemonade, creating what is now called the credibility revolution. And we can lead again. We are a hub science, after all, not just in content (Cacioppo, 2007), but also in process.

In the coming months, I'll encourage the APS Board of Directors to take up these topics seriously. This means learning from those who study the process of science and the scientists themselves in the same way that we study the behavior of participants in our labs. It also means engaging with those who have creative ideas about how to reshape our incentive structure and mitigate the publication arms race. In the meantime, change can start with each individual.

Each of us, the next time we're on a search or tenure-and-promotion committee, can commit to reading applicants papers instead of counting them. Each of us, when sitting down to write the next manuscript, or even better, to design the next set of experiments, can ask: Will this research contribute something of substance? Does it have a real possibility of moving psychological science forward or applying our science to help those in need? Each of us, when we encounter failure, can admit it freely, applauding our colleagues who do the same because being wrong sets the stage for important scientific discoveries (Firestein, 2012, 2015). And each of us, the next time we're on a grant panel, can encourage research that has a high risk

of failure but higher potential payoff: research of substantial creativity that seriously challenges the status quo. The future of psychological science depends on it. ●

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NIH Delays Some Clinical Trials Requirements Imposed Earlier on Basic Behavioral Research



Psychological scientists doing basic behavioral research can take a deep breath — kind of. The National Institutes of Health (NIH) is delaying for 2 years some of the clinical-trials requirements it earlier attempted to impose on basic research.

Over the past several years, APS and other organizations and individuals have actively opposed a series of NIH policy changes that classified basic research with humans as clinical trials and introduced new requirements for scientists conducting basic research with human subjects, including that scientists register and report basic research with humans on [ClinicalTrials.gov](https://www.clinicaltrials.gov), a website designed for clinical-trials research. There was unanimous agreement in the scientific community in support of appropriate registration and reporting — the opposition in this case was to the requirement that [ClinicalTrials.gov](https://www.clinicaltrials.gov) be the platform.

Following this pushback, NIH delayed enforcement of the parts of these policies related to [ClinicalTrials.gov](https://www.clinicaltrials.gov) and released a request for information (RFI) to the scientific community seeking feedback on best practices for registration and reporting of basic research. This new notice (NOT-OD-19-126) follows the community's response to the RFI and further extends the period of delayed enforcement to September 2021.

NIH says it now recognizes that the clinical trials platform doesn't work for basic research and will work with the basic research community to identify best practices for registering and reporting basic studies. More than one insider at NIH has expressed regret that the community wasn't consulted from the start so that all of the subsequent difficulties could have been avoided.

While a step in the right direction, this latest change at NIH may only add to the confusion caused by relabeling basic research as clinical trials. And it is important to note that NIH has not

backed away from that relabeling.

APS has been working to educate members of Congress about the differences between basic behavioral research and clinical trials and that different sets of policies are necessary to encourage transparency and openness in both types of research. In fact, the delayed enforcement period originally arose thanks to Congress's March 2018 instruction that NIH pause enforcement of these policies to give sufficient time to consult with the basic-research community to determine reporting standards best suited for basic research.

“There is concern that policy changes could have long-term, unintended consequences for this research, add unnecessary regulatory burdens, and substantially increase the number of studies in the [ClinicalTrials.gov](https://www.clinicaltrials.gov) database that are not clinical trials,” noted Congress.

This issue will continue to unfold, and APS will work to reverse the labeling of basic research as clinical trials. Scientists interested in applying to NIH for research funding should read the new notice carefully. Because of the complicated nature of NIH's policies and the varying degree to which they affect basic research with humans, APS recommends that scientists speak with an NIH program officer about any planned research prior to beginning the grant application process. ●



You can read the new NIH notice “Extension of Certain Flexibilities for Prospective Basic Experimental Studies with Human Participants” at grants.nih.gov/grants/guide/notice-files/NOT-OD-19-126.html.



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Coming to Consensus on Reproducibility

No Crisis but No Time for Complacency

By Wendy Wood and Timothy D. Wilson

The National Academies of Sciences, Engineering, and Medicine recently published a report titled *Reproducibility and Replicability in Science*. We both had the privilege of serving on the committee that issued the report, and this is a brief summary of how the committee came about and its main findings.

In response to concerns about replicability in many branches of science, Congress — via the National Science Foundation — directed the National Academies to conduct a study. The mandate was broad: to define reproducibility and replicability, assess what is known about how science is doing in these areas, review current attempts to improve reproducibility and replicability, and make recommendations for improving rigor and transparency in research — across all fields of science and engineering, not just psychological science.

A committee of 13 scientists was formed that, in addition us, included geoscientists, medical researchers, natural scientists, engineers, computer scientists, historians of science, and statisticians. The committee met 12 times in a period of 16 months. This was not too difficult for Tim, who could hop on a train in Charlottesville and be in Washington in a couple of hours. It was more difficult for Wendy, who interspersed a sabbatical in Paris with flying back and forth to DC several times. Regardless, we both agree that it was a fascinating and enlightening experience to serve on the committee.

So, what did the committee conclude? Our job was first to define reproducibility and replicability. As you can imagine, definitions vary greatly across disciplines, and our consensus definitions were hammered out from a range of possibilities.

We defined *reproducibility* as computational reproducibility — obtaining consistent computational results using the same input data, computational steps, methods, code, and conditions of analysis. *Replicability* was defined as obtaining consistent

results across studies that were aimed at answering the same scientific question, each of which obtained its own data. In short, reproducing research involves using the original data and code, whereas replicating research involves new data collection and methods similar to those used in previous studies.

Once we defined our terms, what did the committee conclude about the state of reproducibility and replicability in science? This question is probably foremost in many people's minds, given the attention it has received, both in our field and in the national media. And, as anyone who has followed this debate knows, there is considerable disagreement about the answer. Some believe that our field faces severe problems, such as frequent use of lax methods, that threaten validity. Others feel that the extent of these problems has been exaggerated. Still other researchers note that rigorous research practices have been an important focus in psychological science and other scientific fields long before the current concerns with reproducibility and replicability.

The committee's answer was, in short, "No crisis, but no complacency." We saw no evidence of a crisis, largely because the evidence of nonreproducibility and nonreplicability across all science and engineering is incomplete and difficult to assess. At the same time, steps can be taken to improve in both areas.

The committee's specific conclusions and recommendations differed for reproducibility and replicability. One key difference involves the rates of reproducibility and replicability to which we should aspire. There is large agreement on the answer to this question for reproducibility: When a researcher transparently reports a study and makes available the underlying digital artifacts, such as data and code, the results should always be computationally reproducible. The committee made recommendations about how to achieve reproducibility, largely by improving transparency. For example, the committee proposed that, to help ensure the reproducibility of computational results,

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APS William James Fellow **Timothy D. Wilson** is the Sherrell J. Aston Professor of Psychology at the University of Virginia. His research explores aspects of self-knowledge, social cognition, and affective forecasting. Wilson can be contacted at tdw@virginia.edu.



You can learn more about the report findings and read the full text at sites.nationalacademies.org/sites/reproducibility-in-science/index.htm.



researchers should convey clear, specific, and complete information about any computational methods and data products that support their published results to enable other researchers to repeat the analysis.

The scientific ideal for replicability — in which researchers attempt to obtain consistent results by collecting new data, using similar methods — is more nuanced. For example, a key observation in the report, we believe, is that, “The goal of science is not, and ought not to be, for all results to be replicable” (p. 28), because there is a tension between replicability and discovery. (For an excellent discussion of this issue, see B. Wilson & Wixted, 2018, *Advances in Methods and Practices in Psychological Science*, 1, 186–197).

Similarly, the committee noted that nonreplicability can arise from a number of sources, some of which are potentially helpful to advancing scientific knowledge and others that are unhelpful.

Helpful Sources of Nonreplicability

Nonreplicability can be caused by limits in current scientific knowledge and technologies, as well as inherent but uncharacterized variabilities in the system being studied. When such nonreplicating results are investigated and resolved, it can lead to new insights, better characterization of uncertainties, and increased knowledge about the systems being studied and the methods used to study them.

Unhelpful Sources of Nonreplicability

Nonreplicability also may be due to foreseeable shortcomings in the design, conduct, and communication of a study. Whether arising from lack of understanding, perverse incentives, sloppiness, or bias, these unhelpful sources of nonreplicability reduce the efficiency of scientific progress.

One unhelpful source of nonreplicability is inappropriate statistical inference. Misuse of statistical testing often involves post hoc analysis of data already collected, making it seem as though statistically significant results provide evidence against the null hypothesis, when in fact they have a high probability

of being false positives. Other inappropriate statistical practices include *p*-hacking — the practice of collecting, selecting, or analyzing data until a result of statistical significance is found — and “cherry picking,” in which researchers may unconsciously or deliberately selectively report their data and results.

To minimize unhelpful sources of nonreplicability, we outlined initiatives and practices to improve research design and methodology, including training in the proper use of statistical analysis and inference, improved mentoring, repeating experiments before publication, conducting rigorous peer review, utilizing tools for checking analyses and results, and improving transparency in reporting.

Replicability and reproducibility are not the only ways to gain confidence in scientific results. Research synthesis and meta-analysis can help assess the reliability and validity of bodies of research. As you probably know, meta-analyses provide estimates of overall central tendencies (effect sizes or association magnitudes), along with estimates of the variance or uncertainty in those estimates. Meta-analytic tests for variation in effect sizes can suggest potential causes of nonreplicability in existing research — in individual studies that are outliers, in particular populations, or using certain methods. Of course, such analyses must take into account the possibility that published results are biased by selective reporting and, to the extent possible, estimate its effects.

To conclude on a personal note, it was fascinating to learn about the ways that different scientific disciplines attempt to establish reproducibility and replicability. We were more convinced than ever in the fundamental soundness of our field. Like other sciences, psychological science is producing a great deal of useful and reliable knowledge — replicable discoveries about human thought, emotion, and behavior. Increasingly, researchers and governments are using such knowledge to meet social needs and solve problems, such as improving educational outcomes and reducing government waste from ineffective programs. We strongly endorse the broad conclusion from our meetings: No crisis, but no time for complacency! ●



Upcoming events organized by the National Academies of Sciences, Engineering, and Medicine:

- Public Symposium: Reproducibility and Replicability in Science
September 24, 2019
- Public Workshop: Enhancing Scientific Reproducibility through Transparent Reporting
September 25–26, 2019

Register to attend in person or via online webcast at
sites.nationalacademies.org/sites/reproducibility-in-science.

Weaknesses in Emotion-Expression Research Outlined in New Report



Software that purports to read emotions in faces is being deployed or tested for a variety of purposes, including surveillance, hiring, clinical diagnosis, and market research. But a new scientific report finds that facial movements are an inexact gauge of a person's feelings, behaviors, and intentions.

"It is not possible to confidently infer happiness from a smile, anger from a scowl or sadness from a frown, as much of current technology tries to do when applying what are mistakenly believed to be the scientific facts," a group of leading experts in psychological science, neuroscience, and computer science write in their comprehensive research review.

The report appears in *Psychological Science in the Public Interest*, and is authored by APS President Lisa Feldman Barrett of Northeastern University, Ralph Adolphs of the California Institute of Technology, Stacy Marsella of Northeastern University and the University of Glasgow, Aleix M. Martinez of The Ohio State University, and APS Fellow Seth D. Pollak of the University of Wisconsin-Madison.

The authors note that the general public and some scientists believe that there are unique facial expressions that reliably indicate six emotion categories: anger, sadness, happiness, disgust, fear, and surprise. But in reviewing more than 1,000 published findings about facial movements and emotions, they found that typical study designs don't capture the real-life differences in the way people convey and interpret emotions on faces. A scowl or a smile can express more than one emotion depending on the situation, the individual, or the culture, they say.

"People scowl when angry, on average, approximately 25% of the time, but they move their faces in other meaningful ways when angry," Feldman Barrett explains. "They might cry, or

smile, or widen their eyes and gasp. And they also scowl when not angry, such as when they are concentrating or when they have a stomach ache. Similarly, most smiles don't imply that a person is happy, and most of the time people who are happy do something other than smile."

In a separate article in the journal, Alan Cowen and APS Fellow Dacher Keltner of the University of California, Berkeley, Disa Sauter of the University of Amsterdam, and APS Fellow Jessica L. Tracy of the University of British Columbia note that most scientists agree that facial expressions are meaningful, even if they don't follow a one-to-one match with the six basic emotion categories. They propose a new model for studying emotion-related responses in all their complexity and variations. This approach would measure not only facial cues, but also body movements, voice fluctuations, head movements and other indicators to capture such nuanced responses as smiles of embarrassment or sympathetic vocalizations, they say.

"We thought this was an especially important issue to address because of the way so-called 'facial expressions' are being used in industry, educational and medical settings, and in national security," Feldman Barrett and her coauthors say.

The report was featured in *The Washington Post*, *NBC News*, *Forbes*, *The Verge*, *Fast Company*, *MIT Technology Review*, and *ACLU's Free Future blog*. ●



You can read the entire report and accompanying article online at journals.sagepub.com/toc/psia/20/1.

APS Fellows Receive Presidential Award for Early-Career Achievements



APS Fellows **Jamil Zaki** of Stanford University, **Adriana Galván** of University of California, Los Angeles, and **Mary C. Murphy** of Indiana University are among the 2019 recipients of the Presidential Early Career Award for Scientists and Engineers (PECASE). Established in 1996, the award is the highest honor bestowed by the US government to outstanding scientists and engineers in the early stages of their research careers.

Zaki, a 2015 recipient of the APS Janet Taylor Spence Award for Transformative Early Career Contributions, is a psychology professor and director of the Stanford Social Neuroscience Laboratory. His research, with support from the National Science Foundation, uses methods that span neuroscience, physiology, social psychology, and behavioral economics. He studies people's motivation to approach or avoid empathizing with others. His work has shown that empathy can be cultivated over time. His neuroscience research has identified brain systems associated with different types of empathy. His book, *The War for Kindness: Building Empathy in a Fractured World*, has just been released.

Galván, a professor of psychology at UCLA's Brain Research Institute, has made pioneering discoveries about adolescent neurodevelopment. Her current work, backed by the National Institute of Mental Health, focuses on the neural circuitry thought to underlie the development and symptomology of anxiety in early adolescence. She, along with APS Fellow Thomas Griffiths of Princeton University, is also a 2019 recipient of the National Academy of Sciences' prestigious Troland Research Award,

which recognizes young investigators' outstanding achievement in experimental psychology.

Murphy, an assistant professor of psychology and brain sciences, develops and tests theories about social identity threat, stereotype threat, and intergroup dynamics. Her current research includes an NSF-funded examination of situational cues in inter- and intraracial interactions that affect people's level of identity threat, emotional experiences, cognitive performance, and motivation to build friendships.

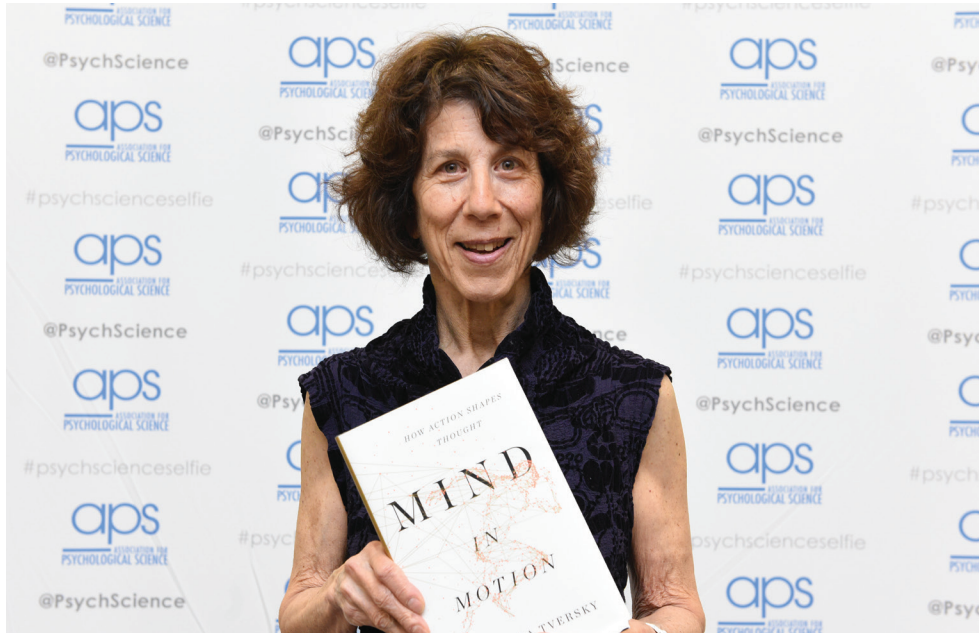
Other psychological scientists receiving the PECASE include University of Connecticut researcher **Marie Coppola**, who studies language acquisition and creation, with a particular focus on how early exposure to language fosters typical development in social cognition and numerical cognition.

Zaki, Murphy, and Coppola received their PECASE nominations from the National Science Foundation. Galván received her nomination from the Department of Health and Human Services. ●



You can learn more about PECASE at [nsf.gov/awards/pecase.jsp](https://www.nsf.gov/awards/pecase.jsp).

Tversky Proposes 'Audacious' Theory of Spatial Thinking



Listen to Barbara Tversky discuss her book in a podcast interview with the Big Think bigthink.com/podcast/world-makes-mind-with-barbara-tversky.

Barbara Tversky

In *Mind in Motion: How Action Shapes Thought*, published June 21, APS Immediate Past-President **Barbara Tversky** takes a wide-ranging look at the connection between movement and thinking. As she explains in the book's introduction, "the premise is audacious: Spatial thinking, rooted in perception of space and action in it, is the foundation for all thought. The foundation, not the entire edifice." ●

Polaschek Receives Prestigious Appointment in New Zealand's Queen's Birthday Honours

APS Fellow **Devon Leigh Logan Polaschek** has been made a Member of the New Zealand Order of Merit for her contributions to criminal psychological science.

Polaschek, a professor of psychology and crime science at the University of Waikato, is among 56 individuals appointed as Members of the Order by Queen Elizabeth II of the United Kingdom, in her right as Queen of New Zealand. The appointments are made on the advice of the New Zealand government to reward good works across the fields of health, arts, athletics, education, science, and social services.

Before coming to the University of Waikato, Polaschek was a researcher and professor of criminal psychology at Victoria University of Wellington for 23 years. She conducted research at the Rimutaka Prison Special Treatment Unit Rehabilitation Programme (STURP) from 1999 until 2017. Through this research, she sought to devise and evaluate new methods of rehabilitating and reintegrating imprisoned men into society while reducing their risk of reoffending. The STURP has been shown to reduce the risk of recidivism by as much as 37%.

Polaschek has produced more than 120 books, book chapters, research articles, and government reports, many of which have been cited in the international academic literature. A former Fulbright scholar, Polaschek currently directs the newly formed New Zealand Institute for Security and Crime Science at the University of Waikato. ●



Devon Polaschek

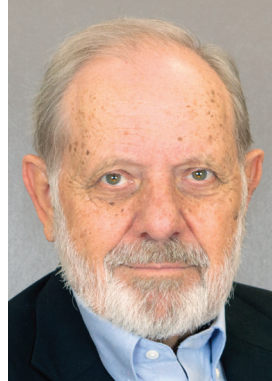
THE 2020 APS LIFETIME



APS Mentor Award
Toni C. Antonucci
University of Michigan



APS Mentor Award
Elizabeth L. Bjork & Robert A. Bjork
University of California, Los Angeles



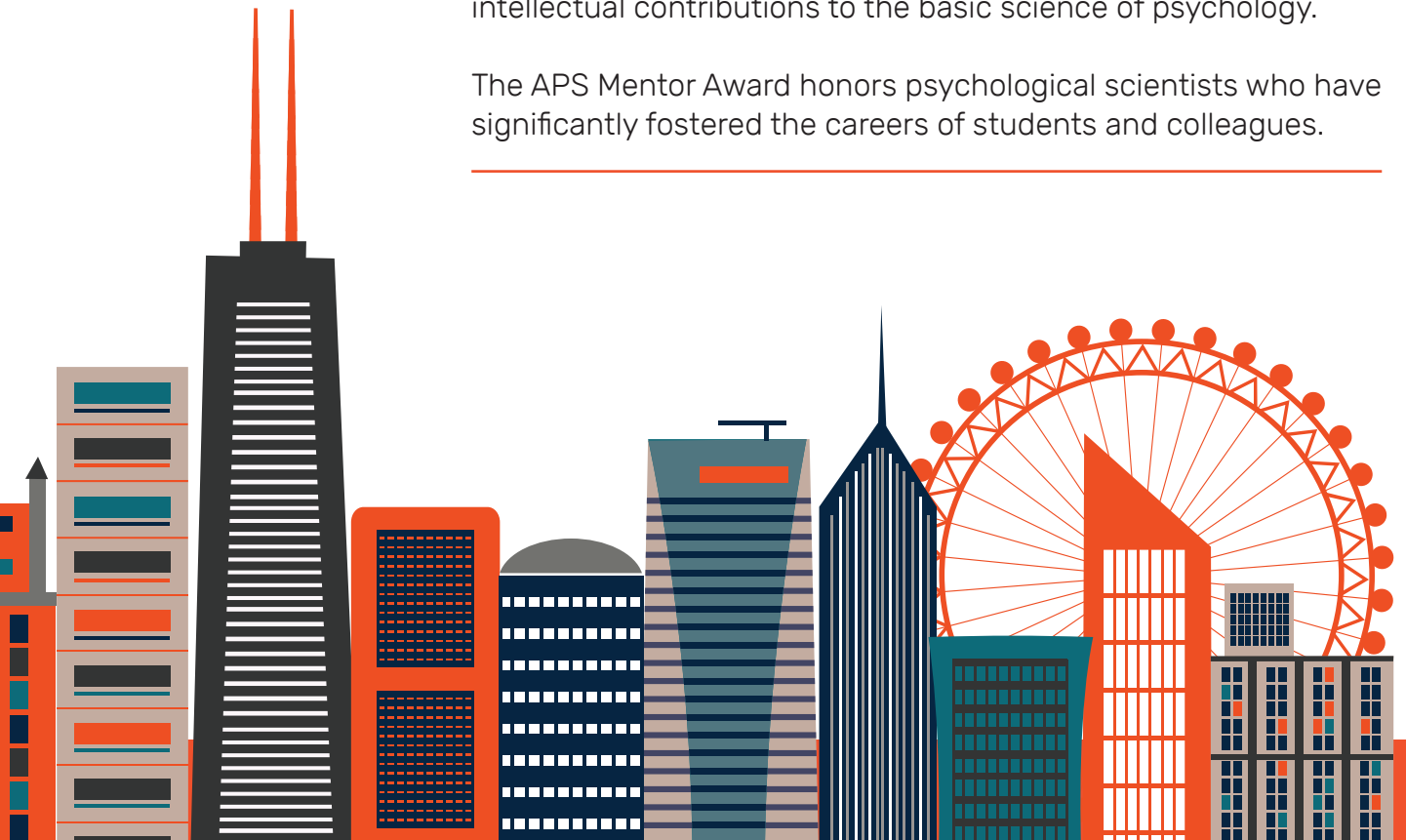
William James Fellow
Neil Burgess
University College
London

About the Awards

The APS James McKeen Cattell Fellow Award honors a lifetime of significant intellectual achievements in applied psychological research and impact on a critical problem in society at large.

The APS William James Fellow Award honors a lifetime of significant intellectual contributions to the basic science of psychology.

The APS Mentor Award honors psychological scientists who have significantly fostered the careers of students and colleagues.



ACHIEVEMENT AWARDS



William James Fellow
Carol S. Dweck
Stanford University



William James Fellow
Susan A. Gelman
University of Michigan

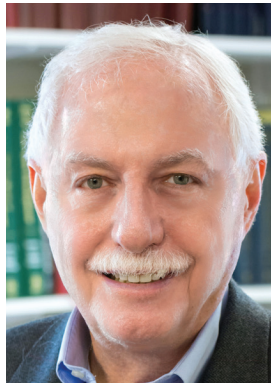


Photo Credit: Bruce Gilbert

APS Mentor Award
E. Tory Higgins
Columbia University



James McKeen Cattell Fellow
Thomas E. Joiner
Florida State University



James McKeen Cattell Fellow
Richard M. Lerner
Tufts University



William James Fellow
Andrew N. Meltzoff
University of Washington

Recipients will be recognized at the
32nd APS Annual Convention
in Chicago, IL, USA
May 21-24, 2020

www.psychologicalscience.org/awards

Call for Applications

APS Fund for Teaching and Public Understanding of Psychological Science

Small Grants Program

APS invites applications for nonrenewable grants up to \$5,000 to launch new projects broadly addressing the categories below:

- **Scholarship of Teaching and Learning (SoTL):** Grants in this category support high quality, potentially publishable scholarship directed at the teaching and learning of psychological science.
- **Meetings and Conferences:** Grants in this category support efforts that facilitate communication among teachers of psychological science who share common challenges and who would benefit from sharing ideas and resources.
- **Technology and Website:** Grants in this category support projects leveraging technological resources to enhance the teaching and learning of psychological science, and to increase the reach and efficient dissemination of related resources.

NEXT APPLICATION DEADLINE: OCTOBER 1, 2019

For details, go to: www.psychologicalscience.org/smallgrants

Questions? Contact teachfund@psychologicalscience.org

Several prominent psychological scientists are joining the APS Board of Directors for 2019–2020, as **Lisa Feldman Barrett** of Northeastern University assumes the role of President. **Shinobu Kitayama** of the University of Michigan becomes President-Elect and **Barbara Tversky** (Teachers College, Columbia University and Stanford University) moves to Immediate Past President.

The Board's two new Members-at-Large are **Michele Gelfand**, University of Maryland, College Park, and **Ann M. Kring** of the University of California, Berkeley. They join Members-at-Large **Maryanne Garry**, University of Waikato in New Zealand; **Vonnie C. McLoyd**, University of Michigan; **Stacey Sinclair**, Princeton University; and **Howard M. Weiss**, Georgia Institute of Technology.

The Board also includes two new officers. **Natalie Sebanz** of Central European University is serving as Secretary, and **Richard Ivry** of the University of California, Berkeley, is Treasurer.



Lisa Feldman Barrett

Northeastern University

APS President 2019–2020

Lisa Feldman Barrett has altered the understanding of emotional experiences by revealing how they vary within ourselves and between cultures. She has discovered that emotions do not “live” in certain brain structures (e.g., fear is not housed in the amygdala) and explores the neuroscientific basis of emotions.

Feldman Barrett, who served as an at-large member of the APS Board from 2011 to 2014, has research appointments in psychiatry and radiology at Harvard Medical School and Massachusetts General Hospital. She has published more than 200 academic papers and most recently coauthored a report for *Psychological Science in the Public Interest* titled “Emotional Expressions Reconsidered: Challenges to Inferring Emotion From Human Facial Movements.” Her TED Talk, “You Aren’t at the Mercy of Your Emotions,” has been viewed nearly 5 million times and was one of the most popular presentations on the platform in 2018. She has testified

before Congress on the role of emotional literacy in public health, and has discussed her research in various media outlets. Her book, *How Emotions Are Made: The Secret Life of the Brain*, details how emotion is constructed mentally and physiologically in the moment and across the course of our lives.

Feldman Barrett has been honored with multiple awards for her research on the nature of emotion, including the National Institutes of Health Director’s Pioneer Award. She also is a recipient of the 2018 APS Mentor Award. She is a Fellow of the American Academy of Arts & Sciences, the Society of Experimental Psychologists, the Royal Society of Canada, the American Association for the Advancement of Science, the Society for Personality and Social Psychology, and the Mind and Life Institute.



Shinobu Kitayama

University of Michigan

APS President-Elect 2019–2020

Shinobu Kitayama is a widely recognized authority on cultural variations in cognition, emotion, and motivation. His studies over the past 25 years have focused on comparing the psychological processes of people from Asian countries — including Japan, the Philippines, and China — with those of Americans. He has used a variety of experimental methods to document these differences. His more recent work has explored how psychological tendencies vary across regions, social classes, and ages, with the goal of uncovering the sociocultural underpinnings of these tendencies.

Kitayama is a pioneer in the field of cultural neuroscience, which he described in a 2013 feature story for the *Observer*. He has used neuroscience measures such as fMRI and electroencephalography to investigate the dynamic, recursive interactions between culture and the brain.

His work has also focused on how certain dopamine-related genes might modulate cultural acquisition.

Kitayama is the recipient of numerous honors. He was named a Guggenheim Fellow in 2010, was inducted into the American Academy of Arts & Sciences in 2012, and received the Humboldt Research Award in 2019.





Michele Gelfand

University of Maryland, College Park

APS Board Member 2019–2022

Through her use of field, experimental, computational, and neuroscience methods, Michele Gelfand is considered a pioneer in the scientific understanding of the strength of social norms and punishments across human groups. Her work has shown the distinction between tight cultures — which have strict and heavily enforced norms — and loose or permissive cultures. In examining nations, states, local communities, workplaces, and families, she has revealed how our life choices and behaviors are influenced by the social codes by which we live and work.

Gelfand has also demonstrated a link between a history of threats — such as natural disasters and vulnerability to infectious diseases — and greater cultural tightness. This rigidity allows those cultures to coordinate more effectively to survive. Gelfand outlines this work in her book *Rule Makers, Rule Breakers: How Tight and Loose Cultures Wire Our World*.

Gelfand has won a number of awards for her work, including the Alexander von Humboldt Foundation's Anneliese Maier Research Award for internationalization of the humanities and social sciences in Germany.



Ann M. Kring

University of California, Berkeley

APS Board Member 2019–2022

Ann M. Kring's work focuses on the emotional features of schizophrenia and the link between cognition and emotion in the disorder. She also studies emotions in healthy individuals, examining how differences in expressive behavior are linked with cognition, personality, and social context.

A primary emphasis of Kring's research program is uncovering the mechanisms that drive emotion disconnection in schizophrenia. She's also examining emotional responses in women with schizophrenia — a population that is notably understudied.

As an additional line of inquiry, Kring is exploring the ways in which emotion interacts with attention, working memory, and other cognitive processes in people with schizophrenia.

She is a member of the editorial board of *Psychological Science in the Public Interest*, as well as the editorial boards of the journals *Emotion* and *Applied and Preventive Psychology*. She is a fellow of the International Society for Research on Emotion, the International Early Psychosis Association, and several other organizations.



Natalie Sebanz

Central European University

APS Secretary

Natalie Sebanz studies the cognitive and neural basis of social interaction, with a special focus on how we coordinate joint actions ranging from clinking glasses to playing a piano duet. Her investigations have combined behavioral, electrophysiological, brain imaging, and patient studies. The work covers all aspects of joint action, including planning, coordination, communication, learning, attention, perception, and perspective taking.

Sebanz has held appointments at Rutgers University, the University of Birmingham, and Radboud University in the Netherlands. She is a recipient of the European Science Foundation's Young Investigator Award and the Young Mind and Brain Prize.



Richard B. Ivry

University of California, Berkeley

APS Treasurer

Cognitive psychologist Richard Ivry's research program addresses both the psychological and neural processes underlying how people plan movements, select movements, coordinate them bimanually, and perform them in a fluid, organized manner. His work on the role of the cerebellum in timing has provided the dominant view of how this structure contributes to fluid movements.

In his work, Ivry, an APS William James Fellow, combines behavioral studies with transcranial magnetic stimulation and fMRI work to investigate the dynamics of preparatory processes in the motor pathways, as well as neuropsychological studies involving patients with Parkinson's disease, cerebellar degeneration, or cortical lesions. He also has made important contributions to our understanding of psychological processes and neural mechanisms involved in action selection, temporal processing, and hemispheric specialization. ●

Call for Nominations: APS Rising Stars

Deadline: September 30, 2019



The APS Rising Star designation recognizes outstanding psychological scientists in the earliest stages of their post-PhD research careers. Nominations will be evaluated on the basis of the following criteria:

- Significant publications
- Significant recognitions
- Significant discoveries, methodological innovations, or theoretical or empirical contributions
- Work with potentially broad impact

Eligibility for the 2019 nomination period is limited to individuals who received a PhD between January 1, 2013 and December 31, 2016.

Nominations Process: Each nomination must be supported by two APS Members, one of whom must be an APS Fellow. For information on submitting nominations, please visit:

www.psychologicalscience.org/rising-stars

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Bauer Plans to Further Expand Reach of *Psychological Science*

In January 2020, APS Fellow Patricia Bauer will begin a 4-year term as editor of *Psychological Science*. Bauer serves as Senior Associate Dean for Research at Emory University, where she is the Asa Griggs Candler Professor of Psychology. Her research focuses on the development of memory from infancy through childhood, with special emphasis on the determinants of remembering and forgetting. She also studies links between social, cognitive, and neural developments and age-related changes in autobiographical or personal memory. She is the author of the book *Remembering the Times of Our Lives: Memory in Infancy and Beyond* and has served as the editor of several journals, including the *Journal of Cognition and Development* and the *Society for Research in Child Development Monographs*. *The Observer* recently asked Bauer a few questions about her plans for the journal.

One of the hallmarks of *Psychological Science* is that it publishes empirical research across the full spectrum of areas within our field. How will you ensure that the journal continues to attract the best research from such a diverse range of disciplinary perspectives?

Given that *Psychological Science* (*PS*) receives on the order of 2,000 new submissions per year, there is not an immediate issue with attracting manuscripts. Yet there is need for constant attention to ensure that submissions are of the highest quality and that they represent psychological science, writ large.

The most important ingredients for ensuring the highest quality submissions are maintenance and enhancement of the reputation of the journal. One way we can further both of these goals is by making the work published in *PS* even more visible to professionals and the public at large. To this end, I plan three simple steps to make the products of research more available to experts and nonexperts alike.

First, beginning in January 2020, submitting authors will be asked to provide a brief statement explaining the importance of their work, in lay language. These statements will be published along with the article, making the broader significance of the work more immediately accessible to readers.

Second, I intend to explore with APS mechanisms for transmitting these statements to science writers and public policy makers, as a “quick guide” to important articles in each issue of the journal. For people who translate science for other audiences, this will facilitate access to the important work published in *PS* and thereby broaden attention to it.

Third, in each issue of the journal, we will highlight an article or articles that authors and/or members of the editorial team expect to be of special relevance to the public, under a heading of “Psychological Science in the Public Eye” (or something along that line—suggestions are welcome!). This section will draw attention to the public good contributed by research in psychological science and related disciplines.

Together, by making the articles published in *PS* even more visible, these steps stand to increase the number of article citations and to bring *PS*-published material to a broader audience.

There also are a number of steps we can take to help ensure



Patricia Bauer

that submissions to *PS* represent psychological science, broadly. Whereas cognitive and social psychology have been the mainstay of *PS*, the submission guidelines make clear that the journal is interested in receiving more submissions from other areas including (but not limited to) neuroscience, health psychology, and developmental psychology.

This message can be further amplified and reinforced through proactive encouragement of submissions from scientists working in these and other currently underrepresented areas. These efforts can be advanced through activities such as “Meet the Editor” sessions at the annual APS meeting and networking sessions at other relevant meetings, for which the Editor is available for discussion.

Another clear signal that *PS* is open for business for the full range of psychological science is an editorial team that reflects the diversity of scientific inquiry in the field. This goal is very salient to me as I work to assemble the editorial slate.



Our science benefits from diversity and that is no less true with regard to specific open science practices than to any other aspect of the scientific process.”

APS is at the forefront of promoting open practices as part of strengthening methods and findings in psychological science. As those practices take root, it is clear that one size does not fit all, and the practices will be adapted differently in different areas of the field. What impact do you think this will have on the journal?

The evolving landscape of open science practices presents both a challenge and an opportunity. The challenge is apparent in the question — we need to work to ensure that we do not try to force round pegs into square holes. If we put in place a rigid set of requirements that submissions must meet to be eligible for publication in *PS*, we risk losing the very diversity we hope to attract.

In instances in which preregistration is feasible, and in which immediate, open access to materials and data can be provided, we will continue to encourage authors to take these steps. Yet we must be fully cognizant that in some areas of the broad discipline of psychological science, these actions may not be possible or may be ill-advised. The question we need to ask is what is reasonable and appropriate for the genre of the work. The standards for evaluation of the merit of submissions to *PS* must be fair, but that does not mean that they must be the same in all instances.

In recognition of the diversity of approaches represented in psychological science, we should continue to use the strength of APS and the bully pulpit of *PS* to further education in open science principles and practices that can be followed regardless of genre. The APS website prominently displays the association’s commitment to the integrity of the scientific process with resource links on the home page: *Open Science and Methodology*, *Research Transparency*, and *APS: Leading the Way in Replication and Open Science*.

Yet because authors may more typically access *PS* directly rather than through the APS website, it seems desirable to make *PS*’s commitment to open practices more salient, by gathering under one prominent heading the statements currently represented under separate subheadings (e.g., *Open Practices Statement*, under *Preparing your Manuscript*, under *Submission Guidelines*). I will look into possibilities as I transition into my new editorial role.

For the moment, I emphasize that *PS* is and will continue to be welcoming of a wide range of submissions relevant to psychological science. This includes meritorious submissions that fully embrace specific open science practices associated with award of badges, and those that uphold the same high standards of scientific integrity, but for which the specific actions recognized by badges are not feasible and may not even be appropriate. Our science benefits from diversity, and that is no less true with regard to specific open science practices than to any other aspect of the scientific process.

Enlisting reviewers is a challenge for virtually all editors of scientific journals, particularly reviewers who are considered midcareer. If you could make an appeal directly to scientists at that juncture in their careers, what would you say to them about the value of serving as a reviewer for *Psychological Science*?

I appreciate the opportunity to address this issue, not only for colleagues who are midcareer but for those at every stage of their careers. My appeal is three-pronged. First, I appeal to scientists’ role as citizens. We are a self-governing and self-righting discipline. That means that we must shoulder the responsibility for evaluation of the merit of the contributions to our journals, including the flagship journal of APS. If we opt out of that process, we should not be surprised to find that the products fail to satisfy. To put it another way, just as “Every country has the government it deserves” (Joseph de Maistre, 1851: *Lettres et Opuscules Inédits*, Vol. 1, Letter 53), if we abdicate the responsibility to contribute to peer review, we run the very real risk of ending up with a literature that is not very deserving.

Second, I appeal to scientists’ role as educators. When we write a review of a submission, we have an opportunity to educate its authors (not to mention the editors). We also have the opportunity to educate junior colleagues by involving them in the review process (a perfectly acceptable practice as long as standards of scientific integrity and expectations of confidentiality are maintained, and the shared responsibility for the review is acknowledged). This helps socialize the next generation and

also furthers the goals of open science, by involving more people in its practice. We also educate ourselves by learning about great new ideas and findings. And since *PS* submissions that undergo extended review have already had an initial review, there is a high likelihood that the ideas and findings will indeed be great.

Third and finally, I appeal to fairness — for every manuscript you submit for review, you should review two to three submissions by others: that is the effort required to keep the process of peer review working. If you must say “no” to a review, please say it to a different journal! And if you must say “no” to *PS*, please aid the editorial team by suggesting alternative reviewers. I hope that will not be necessary and instead, you will embrace the bumper-sticker motto of “Say ‘yes’ to *PS*!”

You’ve said that one of your goals is to encourage submissions of studies involving diverse populations? Do you have specific ideas for achieving that?

This is a very challenging issue for our field. We all recognize the threats to validity posed by nonrepresentative samples. Yet we all conduct our research within a specific resource envelope and on timelines that often are rather unforgiving (or at least are perceived to be). One result is that we often conduct our research on samples of convenience, and those samples are unlikely to be representative of the world’s population (though more diverse in some ways, even Amazon’s Mechanical Turk (MTurk) represents a particular population).

This issue was brought to the fore for me as I was preparing my vision statement for the *PS* editor search committee. Given the demographics of the APS membership, and under the assumption that APS members are a major source of submissions, I estimated that upwards of 95% of submissions to *PS* and other APS journals probably are from the US, Canada, Europe, and Australia/New Zealand. If that is at all accurate, it means that almost all of our results are from a very restricted — even WEIRD (Western, educated, industrialized, rich, democratic) — population.

This is a systemic problem that will not be solved by the actions of a single journal or editorial team. (And interestingly, focusing efforts on attempts to replicate findings from this reified population — as opposed to testing the limits of their generalizability — stands to exacerbate the problem.) What

we at *PS* can do, however, is to encourage submissions to the journal that feature non-WEIRD populations and to make that policy known. We as individual scientists also can channel some of our creativity toward diversifying our samples and explicitly evaluating the limits of generalizability of our findings.

Recognizing that you will be outlining your plans for *Psychological Science* in greater detail in your upcoming editorial, is there anything else you’d like to say to our readers at this point, other than “stay tuned”?

I take this moment to convey my respect and gratitude to Stephen Lindsay and his editorial team for their strong commitments to *Psychological Science*. They have served the journal and the discipline exceptionally well. On behalf of the field, thank you! My intention is to continue the best traditions established in the journal by Steve and his team, and those who served before him, while also allowing policies and practices to develop with our changing field.

My overall vision for *Psychological Science* is that it continue to serve its function as the flagship journal of the Association for Psychological Science, publishing empirical research that is of the highest quality and greatest significance. I also see room for *PS* to increase efforts for outreach to the wider public, thereby increasing appreciation of the contributions of science and scientific literacy broadly. These goals are well aligned with maintaining *PS*’s leadership in the reproducibility and open science efforts.

I welcome your ideas for how best to accomplish these important goals (pjbauer@emory.edu). ●



The most up-to-date information about *Psychological Science*, its editorial policies, and its submission guidelines is available at psychologicalscience.org/publications/psychological_science.

QUOTE OF NOTE

“Now that most people spend their money electronically – with billions of payment cards in circulation worldwide – we can study these spending patterns at scale like never before.”

Psychological scientist **Joe Gladstone**, University College London, on a recent analyses of financial data from more than 2,000 people which showed that an individual’s spending in certain categories signals personality traits. The study is published in *Psychological Science* (doi.org/10.1177/0956797619849435).

Mastering Motivation

Psychological Science Explores What Keeps Us Engaged at Work

There are 8,760 hours in a year.

Assuming you're getting the doctor-recommended 8 hours of sleep per day, you spend about 2,920 of those hours sleeping. If you work 40 or more hours per week, that means you spend at least 2,080 hours — or just over 35% of the time you're awake in each year — in the office, behind a computer screen, or otherwise engaged in work.

Add any time spent commuting, networking, or checking one last email at home, and it's easy to see how, whether you take a “work to live” or “live to work” approach to your career, in many ways, our work *is* our life. For decades, Maslow's hierarchy of needs has dominated the public understanding of what motivates us to get the most out of those hours, but the ongoing work of psychological scientists suggests that it may be time to give the pyramid a more modern look – or to let the way we conceptualize of workplace engagement take a new shape entirely.

By **Kim Armstrong**, *APS staff writer*

A Stairway to Self-Realization

Maslow's hierarchy of needs – and its iconic pyramid diagram – is widely regarded as “one of the most cognitively contagious ideas in the behavioral sciences,” writes researcher Douglas T. Kenrick, a professor of psychology at Arizona State University, in *Perspectives on Psychological Science*. The pyramid positions human motivation as existing within an intuitive hierarchy, such that basic needs, including hunger and belongingness, must be fulfilled before individuals can aspire to the lofty heights of esteem and self-actualization. The pyramid of needs remains a “robust cultural meme,” but a look back into psychological science's past suggests that Abraham Maslow may never have intended his theory to be portrayed as a pyramid at all.

As emeritus professor John Ballard (Mount St. Joseph University) and colleagues Todd Bridgman and Stephen Cummings (Victoria University of Wellington, New Zealand) note in the *Academy of Management Learning & Education*, Maslow first published his theory of motivation in 1943 with the caveat that any given behavior is likely motivated by a combination of needs. While it was true that a starving man “lived by bread alone,” Maslow believed such situations of true deprivation were relatively rare in the modern world, and that most people were able to focus on higher-level motives while their more basic needs were at least partially satisfied.

It wasn't until over a decade later, in fact, that the hierarchy first appeared in pyramid form in the management textbook *Human Relations in Business* (Davis, 1957) — not as the streamlined triangle we know today, but as a stylized stairway depicting a businessman's ascent from base hunger to heading a nuclear family unit and, in a nod to the battle of Iwo Jima, raising the American flag in a moment of patriotic “self-realization.” Three years later, the triangle we know today appeared in a business journal, *Business Horizons*, in the article “How money motivates men” by consultant C. D. McDermid.

This conceptual drift would continue for decades into the present, Ballard says, as textbook authors, motivational speakers, and other management experts packaged and repackaged Maslow's hierarchy of needs for an executive audience. In that time, researchers' empirical findings had begun to challenge the observational claims on which Maslow had built his theory, favoring everything from a two-level hierarchy, to the possibility that needs may differ in priority according to personality traits such as extraversion and introversion, as well as Clayton P. Alderfer's Existence, Relatedness, and Growth (ERG) model (Alderfer, 1969).

Nonetheless, Maslow's hierarchy of needs remains popular in management circles and entry-level psychology textbooks alike. The pyramid design firmly established the supposedly sequential nature of human motivation, Ballard and colleagues note — perhaps in part because of the way it has been used to position self-actualization as territory reserved primarily for upper management, researchers, and other professional elites.

“Senior executives who were providing research access and other resources for this kind of empirical research at this time would have found agreeable a theory that implied those at the

top of the hierarchy had reached a more advanced state of human development,” Ballard and colleagues explain.

Remodeling the Pyramid

Although Maslow's hierarchy of needs may seem a little dated today, that doesn't mean it's time to bring out the wrecking ball — these and other points of criticism have led Kenrick and colleagues to integrate recent findings from evolutionary, developmental, and cognitive psychology research in an effort to “renovate” the pyramid instead.

“We argue that the basic foundational structure of the pyramid is worth preserving, but that it should be buttressed with a few architectural extensions,” Kenrick and colleagues write in *Perspectives on Psychological Science*.

The researchers suggest two primary modifications to how human motivation is conceptualized in the context of Maslow's hierarchy of needs. In their model, motives that develop later in the human lifespan build upon, rather than replace, earlier developing goals such as physiological needs and self-protection, which remain in the background, ready to become reactivated when necessary.

Additionally, advances in research and theory on human evolution have led the researchers to replace self-actualization at the peak of the pyramid in favor of goals related to reproduction, whether that means having children or supporting the upbringing of relatives and other youths.

“The top of our hierarchy is defined by taking care of others — not pursuing that which gives one idiosyncratic pleasure,” Kenrick and colleagues write.

Kin care requires individuals to divert resources away from self-directed goals and toward the development of other people in their social network, the authors explain, something people can only afford, from an evolutionary perspective, only after they have at least partially satisfied their own needs.

Self-actualization may not function as a distinct need itself, but the researchers believe it still has a place on the pyramid as a part of the needs for social status, esteem, and mating — a stance supported by the popular notion of what it means to become the best “you” you can be.

In a survey of 725 participants ranging in age from 18 to 74 years old, Kenrick and colleagues Jaimie Krems (Oklahoma State University) and Rebecca Neel (University of Iowa) had individuals write about what they believed they would be doing at that point in their lives if they were “realizing their full potential.” Participants then rated the extent to which they associated a series of fundamental biological and social motives (e.g., self-protection, disease avoidance, affiliation, status seeking, mate acquisition, mate retention, and kin care) with those goals.

In line with Maslow's assertion that self-actualization takes different forms for different people, Kenrick and colleagues found that the ways in which people conceptualized their best selves depended on their life stage and history. Across age groups, participants reported status-seeking as most closely related to self-actualization in their professional and academic lives, whereas those with children also associated it closely with kin





[A] sense of rigor and enthusiasm...is often fostered in socially supportive work environments in which employees receive constructive feedback and have the freedom to make creative decisions about how they set and achieve professional goals. ”

care. Single participants were more likely to emphasize mate acquisition in their responses, whereas partnered people focused more on maintaining their existing relationship.

This suggests that the desire to achieve one's full potential may not be a distinct drive, but rather an unconscious by-product of other fundamental motives, Kenrick and colleagues write in the *Personality and Social Psychology Bulletin*. Even our loftiest professional, parental, and romantic achievements may be linked to these “baser” biological and social payoffs.

Regardless of where this sense of personal striving falls on the hierarchy of needs, Kenrick adds, it may not pay off in the way managers expect.

“Self-actualization seems to fit with an emphasis on individual accomplishment, something extolled in the American workplace, and central to an economically self-interested world view,” Kenrick said. “Ironically, though, I believe there is evidence that business leaders who focus on their own successes are less effective at achieving their organization's goals.”

Building Something New

A pyramid isn't the only shape our understanding of workplace

motivation can take, of course, and bringing an empirical edge to how we approach employee engagement has taken some psychological scientists in a relatively new direction: self-determination theory, which suggests that people are motivated to work not only in pursuit of a paycheck and other extrinsic rewards, but also to fulfill their basic psychological needs for autonomy, competence, and relatedness.

In a *Psychological Science* study of 642 female students in Malawi, for example, Marieke Christina van Egmond (University of Hagen, Germany) and colleagues found that even in conditions in which access to basic resources such as food, water, and medical care was limited, students' self-reported motivation to complete schoolwork for its own sake was predictive of attendance, whereas extrinsic motivation (such as feeling obligated to attend school) was not.

Regardless of their level of deprivation, participants also reported similar feelings of relatedness, competence, and autonomy, which in turn gave rise to higher levels of intrinsic motivation and school attendance, suggesting that they were able to fulfill these psychological needs even as their physiological needs may not have been fully met.

In line with self-determination theory's view of humans as “active, growth oriented organisms,” van Egmond and colleagues wrote, these findings suggest that although physical and psychological need satisfaction may go hand in hand, one is not entirely dependent on the other.

Fulfilling the needs for relatedness, competence, and autonomy also plays a central role in encouraging employee engagement, says Arnold B. Bakker, a professor of work and organizational psychology at Erasmus University Rotterdam in the Netherlands.

This sense of rigor and enthusiasm, Bakker writes in *Current Directions in Psychological Science*, is often fostered in socially supportive work environments in which employees receive constructive feedback and have the freedom to make creative decisions about how they set and achieve professional goals. Within Bakker's job demands — resources model of engagement, these conditions can create a proactive cycle in which employees take more initiative at work, boosting performance and allowing them to “job craft” by molding their position to more closely align with their skills and needs, which in turn fosters further engagement.

In a study of 89 teachers working in Croatian secondary schools, Bakker and colleagues also found that employees were more intrinsically motivated when they felt challenged by their professional environment rather than hindered by it, leading to increased engagement and wellbeing at work.

Each of the teachers responded to an online survey at least twice over a 5-day period, reporting their feelings of positive affect, engagement, and intrinsic motivation, as well as the challenges or hindrances they encountered that day.

On days when teachers reported feeling overwhelmed by hindrances, such as unclear expectations or bureaucratic obstacles, including inflexible rules or paperwork, they also reported being less intrinsically motivated to complete tasks, undermining their ability to engage with their students. When teachers reported that

they had the time and resources necessary to take on challenges, meet deadlines, and otherwise address their professional goals, however, they also reported being more intrinsically motivated, which was accompanied by increased engagement and feelings of dedication, meaning, and absorption in their work.

Striking a Balance

One person's hindrance may be another's challenge, and what qualifies as one or the other can vary from day to day for individuals as well — what matters is a person's sense of self-efficacy in a given situation. As Bakker and colleagues Maja Tadić Vujčić and Wido G. M. Oerlemans note in the *European Journal of Work and Organizational Psychology*, hindrances can lead employees to feel as though uncontrollable external factors are preventing them from meeting the demands of their job, while challenges seem to promote professional growth, learning, and personal development.

“Challenge demands can enhance employees' felt sense that the work they do is fun, interesting, and meaningful,” the authors explain, which encourages individuals to put in effort at work not only to accomplish the functional goal of getting paid, but also to achieve a sense of significance and fulfillment.

Teaching is among one of the most demanding professions a person can choose, Bakker notes — challenge, while motivating, can also be a double-edged sword, with engagement on one side and burnout on the other. Even tasks that an individual might perceive as rewarding under the right circumstances, such as working with a challenging student, can become a drain when a person lacks the time, resources, or freedom to address a task to the best of their abilities.

In fact, Bakker adds, it's possible that even engagement itself may be best in moderation, and that providing employees with opportunities to rest and recover throughout the workday could lead to increased productivity overall.

These and other findings suggest that, whether we look at motivation through the lens of self-determination theory or the pyramid of needs, success on the job is about more than just

putting in the hours — it's about striking a balance between the psychological, physical, and environmental factors that allow us to put our best selves into our work. ●

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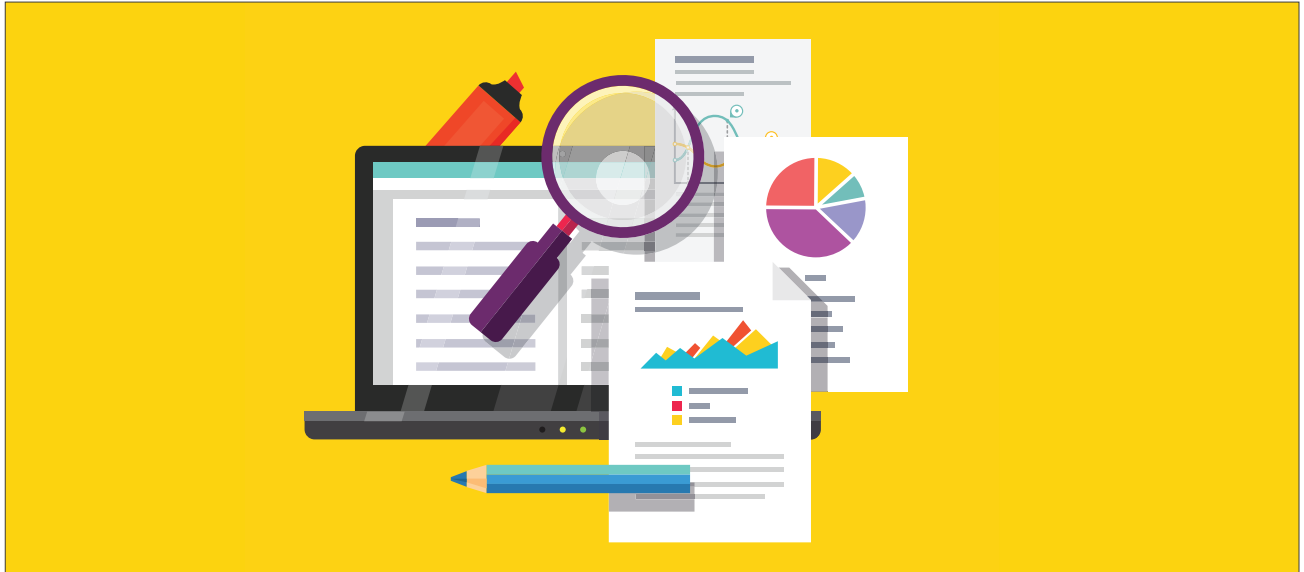
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I've Been Sent a Manuscript to Review — Now What?

By Scott O. Lilienfeld



You've just received an email invitation to review a manuscript for a journal. What should you do next?

Surprisingly, we rarely seem to consider this question in academic circles; I don't think that I encountered it even once in graduate school. I'm not sure why this is so, although perhaps we assume that the answers are so well-known as to warrant no discussion. My experience as a journal editor, as well as conversations with fellow editors, have led me to question this assumption.

There is a veritable cottage industry of user-friendly guides for how to conduct peer reviews (e.g., Bourne & Korngreen, 2006; Spigt & Arts, 2010), including one published in the *Observer* (Roediger, 2007), and I commend them to the reader. Still, few if any of these tutorials instruct prospective reviewers regarding what to do (a) after they receive a manuscript review invitation and (b) before they submit the review.

Most of the suggestions I offer may appear self-evident. Nevertheless, in my experience, they are commonly ignored or flouted by prospective reviewers, even those who are experienced scholars. My conjecture — and admittedly, it is only a hunch — is that the frustrating delays that authors routinely experience while

awaiting feedback on submitted manuscripts stem largely from prospective reviewers' neglect of these pointers.

I apologize if some of my dos and don'ts come across as pedantic etiquette tips. I don't intend this article to be a Dear Abby Advice Column for Potential Journal Reviewers. But let's face it: We academicians are rarely taught or shown good manners (if you doubt that, I'll be happy to share a few a few choice manuscript reviews I've received over the years).

I offer these recommendations as current editor of an APS journal (*Clinical Psychological Science*, or *CPS*), past editor of another journal, current and past Associate Editor of two other journals, and current and past member of over a dozen editorial boards. Although my experiences may be somewhat idiosyncratic to journals in my primary field of study — clinical psychology — I suspect that they will shared by journal editors in most if not all other psychological fields.

Without further ado, here are my eight tips for prospective journal reviewers.

Eight Dos and Don'ts for Reviewing

1. Please consider saying yes, especially if you are an active researcher.

As I remind my graduate students, article reviews can be a lot of work, but they can also be a wonderful opportunity to learn about research being conducted elsewhere in the field, as well as about how the peer-review system works. Nevertheless, the ubiquitous

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lament of every journal editor and associate editor I've met is the difficulty of finding fellow scholars who are willing to serve as peer reviewers. Some evidence from biology journals suggests that this task may be becoming increasingly difficult (Albert, Gow, Cobra, & Vines, 2016; Powell, 2016). These declining reviewer agreement rates aren't surprising. The demands on faculty members to publish high-impact papers and obtain grants have steadily increased, often without offsetting decreases in teaching and service expectations. Furthermore, many departments don't reward peer reviewing, so the small number of "free riders" who publish many papers but perform few or no reviews can escape under the radar without consequences.

When editors complain to me about their difficulties in finding peer reviewers, I respond with the words of Bill Clinton: "I feel your pain." For one manuscript I handled at *CPS*, I went through nine prospective reviewers (some even suggested by the authors), all of whom declined or never responded. After keeping the unfortunate authors waiting for a few months, I ultimately made the editorial decision myself without sending the manuscript out for peer review. I recently spoke with a journal editor who blew through 15 potential reviewers for a manuscript before identifying three who were willing to review it. I wish that such stories were atypical, but they are not. Survey data from science journals suggest that a small proportion of reviewers, perhaps 10%–20%, perform about half of all manuscript reviews (Publons, 2017).

I have even heard of researchers who regularly submit manuscripts to journals but openly state that they turn down all manuscript reviews. Fortunately, such individuals appear to be rare, although many highly published professors refuse to do more than a handful of manuscript reviews per year. On the positive side, I never cease to be amazed at the large number of prominent and overcommitted scholars who promptly and cheerfully agree to review manuscripts, and who return them on or well ahead of schedule. Most of our academic colleagues are generous and responsible, and we need to find better ways of recognizing and rewarding them (fortunately, there is provisional but encouraging progress in this regard; see Cantor & Gero, 2015).

The Golden Rule applies here: If you expect others to review your manuscripts, you should review others' manuscripts in return. Needless to say, if you are a member of an editorial board, you should virtually never turn down an invitation to review a manuscript from that journal unless it entails a conflict of interest or you have already fulfilled or exceeded your agreed-upon annual quota of reviews. Similarly, if you regularly submit manuscripts to Journal X, it is bad manners to turn down most or all reviews from Journal X.

Of course, many of us are far too busy. During the academic year, I receive an average of three to four peer-review requests per week from journals on which I'm not an editorial board member, and probably turn down more than half of them. To be clear, I'm not asking any of us to be martyrs. But we should all do our part and give back to the system.

2. If you can't do the review or don't want to, please say so promptly.

As a long-time editor and associate editor, I am always surprised by the substantial proportion of prospective reviewers who never respond to invitations to reviews, even after repeated email requests sent across several weeks. As *CPS* editor, I'd estimate that about 25% of individuals who receive review requests never respond to them despite multiple prompts. The resulting periods of radio silence frequently delay the review process by several weeks while journal editors scramble to identify a sufficient number of reviewers — typically two or three — for a manuscript.

In fairness, some review requests surely end up in spam/junk email folders. Bearing that point in mind, any of us who might be asked to review manuscripts (which probably includes most of us reading this article) should check these folders regularly.

The bottom line: If you can't or don't want to do a review, let the action editor (the person handling the manuscript) know as soon as possible, ideally within 48 hours. That way, he or she will know to move on and not keep authors waiting needlessly.

3. If you have questions about whether you should perform the review, contact the action editor.

Reviewers are sometimes not certain whether they can agree to a review request. They may have a potential conflict of interest (see more below); they may be a graduate student or postdoc and are unsure whether the action editor (a) is aware of that fact and (b) is fine with their performing the review anyway; they may have reviewed a previous version of the manuscript for another journal and are unsure whether they should review the revised version; and so on. In all of these cases, prospective reviewers should first seek a go-ahead from the action editor to conduct the review.

4. Suggest alternative reviewers if possible.

If you decline a review invitation, you should *always* recommend alternative reviewers if you can. Such recommendations can be enormously helpful to action editors, especially for manuscripts in highly specialized research domains, for which identifying reviewers can be challenging. If the manuscript is so far out of your area of expertise that you don't feel knowledgeable enough to recommend alternative reviewers, let the action editor know that, too. (Earlier this year I received a request from an apparent predatory journal to review a manuscript on Laparoscopic Nissen Fundoplication to treat gastroesophageal reflux disease; I had no idea what Laparoscopic Nissen Fundoplication was, and still don't). Such feedback also provides editors with a better understanding of your domains of reviewing expertise and nonexpertise.

5. If you want to do the review but can't do it within the specified time interval, let the action editor know.

When you receive a review request, you'll almost always be asked to complete it within a given period of time, such as 5 weeks. Some journals ask for 2 or 3 weeks, which is rarely realistic for

overburdened faculty members. If you'd like to do the review, but need somewhat more time — say, an extra week or two — ask the action editor first. He or she can often extend the deadline a bit without much difficulty.

6. Notify the action editor of any potential conflicts of interest.

If you have a potential conflict of interest with respect to a submitted manuscript, let the action editor know before accepting the review request. He or she can then decide whether you should still review the manuscript. Perhaps you developed the Minneapolis Multipurpose Psychobabble Indicator, third edition (MMPI-3) and you receive royalties for it, and you've been asked to review a manuscript critical of the MMPI-3. In that case, you should promptly alert the action editor and ask whether you should still review it.

Other conflicts of interest are nonfinancial (Akl et al., 2014). One of the manuscript coauthors may be a collaborator, current academic reference, or close friend; or the manuscript may challenge a theoretical or empirical position in which you are powerfully invested. Some journals require individuals to report conflicts of interest when submitting manuscript reviews, but many do not.

7. Try to return the review promptly; if you are delayed, let the action editor know.

This one should go without saying, but it needs to be said anyway. Each day you delay returning your review past the deadline is another day that an author, sometimes a graduate student, postdoc, or young professor who is eagerly awaiting news on one of their first submitted manuscripts, may lose sleep over a much-awaited editorial decision. So try to prioritize manuscript reviews whenever you can.

Of course, unexpected things often come up, and almost all reviewers, myself included, sometimes run late. In such cases, inform the action editor and propose an alternative and realistic deadline.

8. Don't go AWOL.

Some reviewers mysteriously disappear for weeks or even months at a time, neglecting to respond to multiple inquiries from journal editors or editorial managers concerning the status of an overdue review. I have one straightforward recommendation for them: Don't do this. Not only will it make them less likely to be invited

to editors' parties at the next APS convention, but it will risk keeping long-suffering authors waiting for additional weeks or months (as astute readers will observe, I'm not beyond using guilt as a persuasion tactic). I can speak from experience as a reviewer who is often a bit late: It's far better to apologize sheepishly for an overdue review and let the action editor know when to expect it than to disappear into the black hole of cyberspace.

Concluding Thoughts

I harbor no illusions that my advice, even if heeded, will dramatically improve the peer-review process, let alone eliminate the inevitable author frustrations that come with it. Still, I hope that my perhaps quixotic etiquette lesson will raise the consciousness of at least some prospective reviewers and make them more cognizant of what and what not to do when that dreaded email request from a journal arrives in their inboxes. ●

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Edited by C. Nathan DeWall and David G. Myers

Teaching Current Directions in Psychological Science offers advice and guidance about teaching a particular area of research or topic covered in this peer-reviewed APS bimonthly journal, which features reviews covering all of scientific psychology and its applications. Visit this column online for supplementary components, including classroom activities and demonstrations:

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Connectivity Creates Costs: How Smartphones Hinder Well-Being

By C. Nathan DeWall

Kushlev, K., Dwyer, R., & Dunn, E. W. (2019). The social price of constant connectivity: Smartphones impose subtle costs on well-being. *Current Directions in Psychological Science*.

<https://doi.org/10.1177/0963721419847200>

How would you describe an ideal conversation? Each person would gaze into the other person's eyes, noticing subtle shifts in emotions and attention. The exchange would eat up each person's attentional bandwidth, leaving both partners deeply interested, intrigued, and in touch with everything the other person said. The conversational dance would take as long as it needed, with little regard for any other personal responsibilities or world events. Leaving the conversation, both parties would feel a warm rush of happiness, social connection, and meaning.

If you owned something that threatened your ability to live up to this social ideal, would you limit your exposure to it?

According to Kostadin Kushlev, Ryan Dwyer, and APS Fellow Elizabeth Dunn (2019), most of us own and use something that does disrupt our social interactions in this way: a smartphone. Through constant connectivity. Kushlev and colleagues argue that, through constant connectivity, smartphones change social life in two ways. First, smartphones get in the way of us giving our interaction partners the attention they deserve, robbing us of the emotional benefits that accompany active social participation. Second, smartphones make some social interactions seem unnecessary, thereby limiting the number of opportunities people have to experience the many emotional, cognitive, and

behavioral benefits linked to social connection.

Taking a family outing to a museum offers numerous benefits, both intellectually and socially. In one experiment, parents either maximized or limited their smartphone use while they toured a museum with their children (Kushlev & Dunn, 2019). Which group of parents felt least distracted and reported the highest levels of social connection and meaning? Those who limited their smartphone use. Ditto for university students who minimized their smartphone use while eating with friends at a café (Dwyer, Kushlev, & Dunn, 2018). Smartphones distract us from our social partners, making us feel more isolated and meaningless.

Planning a drive across the country, would you rather rely on your smartphone's global positioning system (GPS) or a paper map? Relying on your smartphone's GPS simplifies your life. But using a GPS removes social interactions that occur when you inevitably get lost while using a paper map and need to ask for directions. Kushlev and colleagues (2017) examined this in an experiment in which students found an unfamiliar university building by either using their smartphone's GPS or publicly posted signs and maps. Finding a building seems like a solitary activity, but students who used their smartphone's GPS when finding the building felt more socially disconnected when they arrived at the building. They arrived at the building earlier than did the students who didn't have access to GPS directions, but they also missed out on opportunities to have social interactions.

To take this cutting-edge research into the classroom, students can complete the following activity.

Kushlev suggests first getting students to realize how much they're using their smartphones. At the end of a class session, ask students to retrieve their smartphones. Next, depending on the type of smartphone the students use, have them read the following directions:



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On Android devices, download the Digital Wellbeing app from the Google Play Store. To find the app, head to the Settings app and scroll down to Digital Wellbeing (it should be listed between “Accessibility” and “Google”). Tap it and you will be taken to a screen where you can see visual representations of how much time you’ve used your phone that day, as well as how many times you’ve unlocked your phone and the number of notifications you have received.

On iPhones, go to Settings > Screen Time. Tap “Turn On Screen Time.” Tap “Continue.” That’s it! Do *not* activate “Share Across Devices,” or switch it off if it’s already activated. Avoid setting app limits for now. There is no dedicated app icon for Screen Time, but you can access the app in Settings by adding it to your Widget Screen (accessible by swiping right from your home screen). Click on the widget to see full stats.

Ask half of the students to try to limit their smartphone use as much as possible until the next class session. Ask the rest of the students to continue using their smartphone as they normally would. At the beginning of the next class session, ask students to report how many hours each day they used their smartphones. This will serve as a manipulation check on which group the students are in. Ask students to pair up and discuss how many hours each day they spent using their smartphones.

“The numbers are striking,” said Kushlev, “so just showing those to students is a great class conversation starter.”

Were students surprised at how much they were using their smartphones? Did students spend as much time on their smartphones as they spent studying, exercising, or eating? For students who limited their smartphone use, did they feel less distracted and more socially connected? How might seeing their smartphone usage levels change how they approach their future smartphone use?

Smartphones are everywhere. They have made the world more connected than ever, but those connections come with social costs. Being mindful of our smartphone use can help us make maximum use of their features while maintaining the benefits of social interaction. ●

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Repeating Is Believing: Understanding the Repetition-Induced Truth Effect

By Cindi May and Michael Scullin

Unkelbach, C., Koch, A., Silva, R., & Garcia-Marques, T. (2019). Truth by repetition: Explanations and implications. *Current Directions in Psychological Science*, 28, 247–253.
<https://doi.org/10.1177/0963721419827854>

Concerns about fake news seem to be everywhere these days. From phony Facebook accounts and untruthful tweets to altered photos and edited videos, we are bombarded with disinformation daily. Christian Unkelbach and colleagues (2019) explain how such repeated exposure to false “facts” feeds misinformed beliefs.

One key influence on our belief system is repetition. If we hear a piece of information numerous times, we come to believe it. This repetition effect is incredibly robust, and occurs with all sorts of information, including:

- Trivia questions (e.g., “The thigh bone is the longest bone in the human body”; Hasher, Goldstein, & Toppino, 1977)
- Consumer opinions (e.g., “Billabong shampoo leaves hair shiny with no residue”; Johar & Roggeveen, 2007)
- Disinformation news items (e.g., “Donald Trump sends his own plane to transport 200 stranded marines”; Pennycook, Cannon, & Rand, 2018)

Warning people about this repetition-induced truth effect doesn’t seem to inoculate them against it (Nadarevic & Aßfalg, 2017), nor are people immune to it when they are highly motivated to be accurate (Garcia-Marques, Silva, & Mello, 2016). The repetition of information can occur within very short intervals — just a few minutes — or over longer durations, such as weeks or months (Brown & Nix, 1996; Schwartz, 1982). Like it or not, if we hear a piece of information numerous times, we come to believe it.



APS Fellow **Cindi May** is a professor of psychology at the College of Charleston. Her research explores ways to enhance memory and cognitive functioning for older adults and individuals with intellectual disabilities. May can be contacted at mayc@cofc.edu.



Michael Scullin is an assistant professor of psychology and neuroscience at Baylor University. His research investigates the interplay of sleep, cognition, and aging, with the overarching goal of translating psychological science into real world benefits. In 2017, he was named an APS Rising Star. Scullin can be contacted at michael_scullin@baylor.edu.

To illustrate this effect with students, first download this PowerPoint demonstration, called the Truth Game, which we created for use in class: tinyurl.com/yyhgg37t. The Truth Game includes two phases and is intended to show students how repetition can lead us to believe falsehoods. In Phase 1, students read individual trivia items and rate each one on a scale from 1 (definitely false) to 7 (definitely true). Once they have rated the Phase 1 sentences, ask students to calculate an average rating across all items. After a short delay (10–15 minutes), execute Phase 2 (as an alternative, run Phase 2 on the next day of class). Students will once again read and rate the veracity of trivia sentences, some of which will be repeated from Phase 1. What the students won’t know is that every repeated statement from Phase 1 is false, and every new statement in Phase 2 is true. Despite this, when you ask them to calculate their average rating for “old” items, not only will they be higher during Phase 2 than they were in Phase 1, they may even be higher than the new (all true) items from Phase 2! The repetition-induced truth effect is so powerful that it can lead us to have more confidence in disinformation than in truth.

Once students experience this repetition-induced truth effect for themselves, ask them to posit potential drivers of the effect. Identifying these drivers is essential not only for understanding how we come to believe information, but also for creating interventions to change false beliefs. Unkelbach and colleagues explore a number of processes thought to contribute to the repetition-induced truth effect, including:

- Frequency: Items experienced more frequently are rated as more true
- Recognition: Recognition of an item as old increases its believability
- Familiarity: Increased familiarity confers greater validity
- Processing fluency: Repetition enhances ease of processing, which in turn increases perceived truth
- Coherent references: Exposure to information builds consistent memory references; repeated exposure strengthens those references, resulting in higher subjective truth

There is evidence suggesting that each of these processes can contribute to higher ratings of truth for repeated information, and that these processes may be competitive or cooperative, depending upon the context (Unkelbach & Rom, 2017). For example, in a study by Garcia-Marques and colleagues (2015), participants in Phase 1 read a statement (e.g., “Crocodiles sleep with their eyes open”) that was followed by a similar but contrasting statement in Phase 2 (“Crocodiles sleep with their eyes

closed”). The similarity of these statements increases processing fluency, which should result in higher subjective truth.

When participants rated both statements on the same day, however, they judged the contrasting statement as *less true* than completely novel statements (despite its high fluency) because it was inconsistent with the initial reference. In this immediate condition, the need for consistency across memory references overrode processing fluency; a week later, when participants had forgotten many of the initial references, they judged the contrasting statement as *more true* than novel statements because of its general familiarity or fluency.

Regardless of which process or processes are driving the effect in a given context, these findings regarding the repetition-induced truth effect inform our understanding of the conditions that foster the spread of disinformation, and suggest possible strategies for changing false beliefs. Because repetition increases belief, people should make efforts to escape “media bubbles” that tend to regurgitate the same news over and over, and they should also work to consider conflicting evidence.

Counterarguments, however, need to be made carefully. If one has a strong belief, for example, that vaccines cause autism, encountering the contradictory belief that “vaccines do not cause autism” may have the paradoxical effect of increasing the fluency of the erroneous link (vaccines–autism), thereby strengthening the initial false belief. Instead, it will be important to build novel coherent references (“Infectious diseases are at an all-time low for children”) that avoid repeating, directly contradicting, or reinforcing the misinformation.

As a final exercise, have students generate (or Google) common fake news items. Then, using what they know about the processes that reinforce false beliefs, have them generate strategies for combating this disinformation. The difficulty of combating false beliefs should serve as an important caution for students to choose their news outlets wisely, and to check information

carefully before sharing on social media. The act of sharing (and thus repeating) misinformation will lead others to believe it! ●

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The Machine Zone: Why We Fall Into It and How to Get Out

By Dana Gorelik

The next time you're sitting in a crowd of faculty and graduate students waiting for a seminar to begin, take a moment to look around. You'll notice that many of those around you are on their phones — maybe you are too. Whether we're playing games, scrolling through social media, or responding to messages, many of us spend more time on our phones than we'd like to admit. These habits can be detrimental to our productivity and even our mental health. They can take a significant amount of the time away from things that we struggle to find time to do, like finally writing up that manuscript or enjoying much-needed self-care activities. So why do we succumb to this habit?

Need for Social Connection

Most activities that we engage in on our phones are social (e.g., texting, liking posts, looking at photos), reflecting our evolutionary need for social connection. However, smartphones exploit our need for connection, motivating us to meet this need in an unhealthy way (Veissière & Stendel, 2018). Just as it's adaptive for us to crave sugary foods so that we have enough energy to fuel basic bodily functions, it's adaptive for us to desire social connection to survive. However, in both cases, having an overabundance of either can be unhealthy. In the case of social connection, our phones seem to contribute to hypersociality, or a constant need for social connection (Veissière & Stendel, 2018). As graduate students, we should be mindful of this, as our work involves a lot of writing and analyzing data — tasks that are isolating by their very nature. These solitary tasks, coupled with stressful programs of study, can end up amplifying our need for social connection, making our easily accessible smartphones that much more tempting.

Unpredictable Rewards

Psychological scientist B. F. Skinner believed that human behavior is largely controlled by the consequences of our actions. If an action has rewarding consequences, it's more likely to be repeated (Ferster & Skinner, 1957). When rewards are random or difficult to predict, we increase the frequency of a particular behavior with the hope that we'll eventually receive a reward. Our phones can become addictive precisely for this reason — we never know when we'll get that next notification. The buzzing of a notification, and the knowledge that there is a reward to col-

lect, increases dopamine levels in our brain. We anticipate them, sometimes to the point of hearing phantom buzzing (Sauer et al., 2015). It is precisely the unpredictability of the next dopamine rush that elicits frequent phone checking and strong arousal (Veissière & Stendel, 2018). As psychology graduate students, we know all about reinforcement and the famous B. F. Skinner, but that doesn't make us immune to developing these habits. I bet you've even checked your phone while reading this article.

Powerful Habits

Over time, the variable reinforcement schedule of notifications can cause checking our phones to become a habit. Many of us will mindlessly unlock our phones and check one app after another without awareness that we're engaging in this behavior at all. We do this in repeated cycles, referred to as *ludic loops*. For example, you might pick up your phone to check your email, but then you enter a loop of checking Facebook, Instagram, and back to email again, hoping this time around you'll be rewarded with an exciting message, like, or email. Thirty minutes later, you may suddenly realize that you've been scrolling endlessly through these same apps, going from one post to the next, clueless as to how you ended up there. Notifications may initially hook us into checking our phones when we see or hear them but, at some point, we don't even need this cue anymore. Instead, we engage in this checking behavior out of habit.

State of Flow

Flow is a positive state in which you become so pleasantly absorbed with a task that your awareness of your surroundings and even your sense of time seem to fall away. Because flow is so pleasurable, it also has the potential to be addictive (Csikszentmihalyi, 1975). Researchers investigating the dark side of flow have called this the "machine zone" (Schüll, 2012). Similar entering a flow state, when we enter the machine zone, we tend to forget about daily worries, painful emotions, and even our own sense of self (Schüll, 2012). When you're scrolling endlessly through various social media platforms, you may enter this rewarding and reinforcing state, and naturally, it keeps you coming back. Not surprisingly, a recent study has demonstrated that flow is an important factor in problematic smartphone use (Chen et al., 2017). It's important to be mindful that although the state of flow brings about pleasant feelings, when we fall into the machine zone we're entering a dangerous autopilot mode that can pull us away from activities that we truly value.

Dana Gorelik is a second-year master's degree student in the clinical psychology program at York University. Her research focuses on understanding the construct of trait boredom, as well as examining the cognitive underpinnings of this construct.

How Can We Take Back Control?

Turn off notifications.

It's in our power to change the unpredictable pattern of rewards that draws us to our phones: Just turn off notifications and put your phone out of reach. Instead of compulsively checking for a random notification, you can now check your phone on your own terms, whether that's every 2 hours or at specific times of day. This strategy has been shown to help individuals be more mindful and intentional when it comes to their phone use (Alter, 2017; as cited in Veissière & Stendel, 2018).

Be accountable.

Not all apps are out to get you! Downloading an app that tracks your phone use, such as QualityTime, will allow you to set a goal for your phone use and can help keep track of how many times you pick up your phone and how much time you spend on different apps by the hour, day, week, and month. You can set time limits for specific apps, receive alerts when you've reached those limits, and prevent yourself from accessing them by having the apps become locked for a certain period of time (Gazzaley & Rosen, 2016). Seeing the number of hours you *could* have spent writing up that manuscript or working out at the gym may encourage you to take back control.

Make distracting apps harder to find.

We often get pulled into ludic loops without noticing — by taking distracting apps off your home screen, accessing them becomes a slower, more controlled, conscious process. This allows you to reap the benefits of technology without getting stuck in the

machine zone (Gazzaley & Rosen, 2016). By limiting your unintentional scrolling, you can use the hours you've saved to do something intentional, such as seeing an old friend — maybe you'll even decide to take a much-needed (and guilt-free!) weekend getaway, just like the ones you're always seeing on Instagram.

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Connecting With Strangers Can Keep Us Smiling



In the age of smartphones and self-checkout lines, conversing with strangers can feel like a relic of the past, but research by APS Fellow **Kipling Williams** suggests that even briefly acknowledging someone — with a smile, nod, or a full-on “Hello” — can create a bright spot in everyone’s day. In a series of studies on commuters, APS Fellow **Nicholas Epley** found that when participants overcame their social anxiety to interact with other passengers, they rarely preferred solitude over small talk.

NPR

July 26, 2019

aps Scott O. Lilienfeld, Emory University, *Nature*, July 2, 2019: Does Psychology Have a Conflict-of-Interest Problem?

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How to Task-Switch Responsibly



Switching rapidly between tasks can divide our attention and reduce performance, but it can also provide us with the emotional lift necessary to make it through otherwise monotonous tasks, writes APS Fellow **Daniel Willingham**. Fortunately, taking certain steps — such as giving yourself deliberate study breaks to make time for social media and putting your music on mute when you hit traffic — can help us reap many of the emotional benefits of task-switching without suffering its more dangerous consequences.

The New York Times

July 14, 2019

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David Yeager, University of Texas at Austin, *Nature*, July 2, 2019: Does Psychology Have a Conflict-of-Interest Problem?

The Truth Behind False Confessions



A confession used to make for an open-and-shut case, but the work of researchers like APS Fellow **Saul Kassin** and **Melissa Russano** is beginning to raise awareness about the reality of how trauma, exhaustion, and other psychological pressures can lead innocent individuals to tell interrogators what they think they want to hear: "I'm guilty." For suspects overwhelmed by the investigative process, false confessions can seem like an escape hatch from a uniquely stressful situation, Kassin explains.

Science

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Wesleyan University

Tenure-Track Assistant Professor in Cognitive Neuroscience

Cognitive Neuroscience. The Department of Psychology at Wesleyan University seeks to appoint, at the tenure-track Assistant Professor level, a broadly trained cognitive neuroscientist, for an appointment beginning July 1, 2020. Research focus on any area in cognitive neuroscience, including motor control, object recognition, language, memory, attention and cognitive control, and emotion is welcome. The ideal candidate will have a high quality research program that incorporates undergraduates and will be prepared to teach four courses per year: an introductory course in cognitive neuroscience, two specialized courses in an area of expertise, and one course in statistics or research methods. Additional duties include advising and mentoring students and participating in faculty governance at the departmental and university level. The Department has 18 full-time faculty members in the areas of cognition, neuroscience, psychopathology, development, culture, and social psychology. Members also contribute to interdisciplinary programs in Neuroscience and Behavior, Science and Society, and Feminist, Gender, and Sexuality Studies, and participate in a postdoctoral program. Located in Middletown CT, Wesleyan is a highly selective liberal arts college that highly values both scholarship and teaching, has a strong, diverse undergraduate student body, and offers a generous sabbatical program and competitive salaries and benefits. Wesleyan does not discriminate on the basis of race, color, religious creed, age, gender, gender identity or expression, national origin, marital status, ancestry, present or past history of mental disorder, learning disability or physical disability, political belief, veteran status, sexual orientation, genetic information or non-position-related criminal record. We welcome applications from women and historically underrepresented minority groups. Inquiries regarding Title IX, Section 504, or any other non-discrimination policies should be directed to: Vice President for Equity & Inclusion / Title IX Officer, 318 North College, 860.685.4771. Candidates must have a Ph.D. in Psychology or related field in hand by the time of appointment to be hired as an Assistant Professor. To apply, please submit the following: the curriculum vitae, up to 3 reprints (in a single pdf), a statement of research plans, a teaching statement, and teaching evaluations (if available). As part of the teaching statement, we invite you to describe your cultural competencies and experiences engaging a diverse student body. Applications should be submitted online at <http://careers.wesleyan.edu/postings/6904>. At the time of application, candidates will also be asked to provide email addresses for at least three referees from whom we will obtain confidential letters of recommendation. Review of applications will begin on October 1, 2019 so, to be fully considered, candidates should submit the application early enough to provide their recommenders with time to submit their letters by October 1.

MASSACHUSETTS

Tufts University

Tenure-Track Assistant Professor in Quantitative/Computational Psychology

The Department of Psychology at Tufts University is seeking applicants at the tenure-track assistant professor level for a named assistant professorship in Cognitive Science in the area of quantitative/computational psychology to begin September 1, 2020. The successful applicant will have a Ph.D. in Psychology or a closely-related discipline by the appointment start date and an active research program capable of supporting extramural funding. Candidates must connect to and support our graduate and undergraduate programs in Cognitive Science and must have expertise developing or using sophisticated statistical, quantitative, and/or computational models that can address theory-driven questions that span Cognitive Science and Neuroscience. The ideal candidate's research program will study issues bridging to current Psychology faculty research foci and preference will be given to researchers who can capitalize on the use of a pending intellectual property (IP) gift to Tufts of technology permitting brain/computer interaction. We are particularly interested in applicants whose research tools and approaches include: psychometrics, functional neuroimaging, dynamical systems, intensive longitudinal analysis, functional data analysis, social networks, or nonparametric statistics. Candidates should be willing to teach courses that contribute to the statistical training of our Psychology and Cognitive Science graduate students; teaching load is four courses per year, with opportunities for workload-related reductions. Applicants should submit to <http://apply.interfolio.com/65064> the following: a C.V.; a statement of research accomplishments and future plans (including those relevant to the IP mentioned above; note that our department embraces open and reproducible science, and candidates are also encouraged to address how they pursue these goals in their work); a statement of teaching experience and approach; three letters of recommendation which should be uploaded by your recommenders to Interfolio directly; copies of representative scholarly work; and a diversity statement that describes the candidate's aspirations and potential for promoting diversity and inclusion in their professional career. Please contact Jessica Storozuk, Department Manager, at jessica.Storozuk@tufts.edu with any questions. Review of applications will begin October 1, 2019, and will continue until the position is filled. Tufts University, founded in 1852, prioritizes quality teaching, highly competitive basic and applied research, and a commitment to active citizenship locally, regionally, and globally. Tufts University also prides itself on creating a diverse, equitable, and inclusive community. Current and prospective employees of the university are expected to have and continuously develop skill in, and disposition for, positively engaging with a diverse population of faculty, staff, and students. Tufts University is an Equal Opportunity/Affirmative Action Employer. We are committed to increasing the diversity of our faculty and staff and fostering their success when hired. Members of underrepresented groups are welcome and strongly encouraged to apply. If you are an applicant with a disability who is unable to use our online tools to search and apply for jobs, please contact us by calling Johny Laine in the Office of Equal Opportunity (OEO) at 617-627-3298 or at johny.laine@tufts.edu. Applicants can learn more about requesting reasonable accommodations at <http://oeo.tufts.edu>.

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ANNOUNCEMENTS

Send items to apsobserver@psychologicalscience.org

GRANTS

NIH Funding for Using Driving to Detect and Study Dementia

A new grant opportunity offered by the National Institute on Aging (NIA) may be of special interest to psychological scientists who study cognition, clinical science, methodology, or more. Titled "Aging, Driving and Early Detection of Dementia," it is a significant NIH research project grant (R01) aimed at supporting scientists in conducting research using automobile technology and automobile data to detect early signs of cognitive impairment in older drivers.

This opportunity seeks to fund two kinds of research. In NIH's words, these are:

- Basic research on identifying unobtrusive technology for monitoring driving performance and integrating it with other data to detect cognitive decline
- Methodological research on integrating driving-related data (and databases) with data on an individual's health and functional status to detect cognitive impairment.

Successful applications to this opportunity will build a multidisciplinary, integrative team; NIA specially notes that contributions of psychological scientists are invited in this work. This new opportunity will offer teams of scientists up to \$500,000 in direct costs annually.

Letter of Intent Deadline: September 22, 2019

Application Deadline: October 22, 2019

Go to grants.nih.gov/grants/guide/rfa-files/RFA-AG-20-022.html for more information on this funding opportunity.

Call for Papers on Organizational Culture and Strategy

Strategy Science is seeking papers for a special issue titled "Reinvigorating Research on Organizational Culture and its Links to Strategy." The special issue aims to tackle two core questions: First, how do different conceptions of culture relate to one another in organizational contexts, and second, how can integrating these different conceptions help to advance our understanding of a firm's strategy and performance?

The submission deadline is October 1, 2019. For more information, view the full call for submissions online (pubsonline.informs.org/pb-assets/CallforPapers_Linking_Strategy_and_Culture_final.pdf). To submit a manuscript, visit pubsonline.informs.org/journal/stsc.

Submission Deadline: October 1, 2019

2019–2020 American Philosophical Society Grants

The American Philosophical Society is accepting applications for the following grants:

Franklin Research Grants

This program of small grants to scholars is intended to support the cost of research leading to publication in all areas of knowledge, including travel to libraries and archives for research purposes; the

purchase of microfilm, photocopies or equivalent research materials; the costs associated with fieldwork; or laboratory research expenses. Applicants are expected to have a doctorate or to have published work of doctoral character and quality.

Deadlines: October 1, 2019 (notification in January 2020), December 2, 2019 (notification in March, 2020).

Lewis and Clark Fund for Exploration and Field Research

The Lewis and Clark Fund encourages exploratory field studies for the collection of specimens and data and to provide the imaginative stimulus that accompanies direct observation. Applications are invited from disciplines with a large dependence on field studies, such as archaeology, anthropology, biology, ecology, geography, geology, linguistics, and paleontology, but grants will not be restricted to these fields.

Grants will be available to doctoral students who wish to participate in field studies for their dissertations or for other purposes.

Deadline: November 1, 2019 (letters of support due October 30, 2019); notification in April, 2020.

For more information about these two grants, visit amphilsoc.org.

MEETINGS

32nd APS Annual Convention

May 21–24, 2020

Chicago, Illinois

psychologicalscience.org/conventions

4th International Convention of Psychological Science

March 25–27, 2021

Brussels, Belgium

psychologicalscience.org/conventions

Society for the Study of Human Development Biennial Meeting

October 11–13, 2019

Portland, Oregon

sshdonline.org

2019 Behavior, Energy & Climate Change Conference

November 17–20, 2019

Sacramento, CA

beccconference.org

42nd Annual National Institute on the Teaching of Psychology

January 3–6, 2020

St. Pete Beach, FL

nitop.org/

2020 Cognitive Aging Conference

April 16–19, 2020

Atlanta, Georgia

cac.gatech.edu

BANISHING BULLYING WITH SCIENCE

*From serving as a consultant to the National Anti-Bullying Campaign to her many appearances on national TV, APS Fellow **Dorothy L. Espelage**, a clinical psychologist at the University of Florida, is raising awareness about science-backed strategies for preventing bullying and youth violence.*



Dorothy L. Espelage

What brought you to your current work on bullying and peer victimization among school-aged children?

As a graduate student at Indiana University in the early 1990s, I took a job as a research assistant for a Centers for Disease Control grant that was going to use the “the computer” to address youth violence. As the evaluator on this grant, I was charged with developing a survey evaluation tool and I stumbled upon the work of Dan Olweus in Norway, who was studying “whipping boys” — what others were calling bullying. After a solid review of the scholarship on peer aggression, I noticed that bullying was referred to as proactive or instrumental aggression. I asked the PI of the grant, Kris Bosworth, if I could create an aggression measure and the Indiana Teen Conflict Survey was the result. I then spent my first few years as an assistant professor at the University of Illinois, where I further developed and evaluated the University of Illinois Bully scale. From then on, my students and I developed comprehensive and rigorous studies to understand bullying in the US.

What does your research say about the most effective interventions?

Meta-analyses indicate that even under ideal situations of good implementation, bullying prevention programs reduce bullying perpetration and victimization only by 17–23%. Bullying is a complex phenomenon that requires a complex solution — not the simple solutions that schools often implement, such as assemblies and poster campaigns. Effective bullying prevention programming includes strong policies and procedures, ongoing training for staff and educators, involvement of parents, skill training for youth, youth-driven interventions, and school climate improvement.

Where do you see this field of research going in the next 5 years?

We’re starting to see a new generation of prevention and intervention approaches that leverage technology. For example, my students, colleagues, and I have developed a text messaging program for middle school youth to teach them social emotional learning competencies and encourage bystander intervention. We’ve also developed and evaluated a virtual reality bullying prevention experience for middle school youth and demonstrated an increase in empathy in a small pilot. And we’ve developed a reporting app in collaboration with high school youth to increase communication between students and educators. We’ve also developed online professional development materials for school police to improve relations between students and police to promote reporting of safety concerns. I believe that we’ll continue to see the use of technology to improve the efficacy of bullying prevention programs.

You’ve served as a scientific advisor to governmental groups — what advice do you have for researchers who want to get more involved in bringing psychological science into public policy?

It’s important to first establish a strong program of research and disseminate your publications in various outlets beyond conferences. This means writing briefs, conducting webinars, and presenting to practitioners and policymakers outside of psychology. Also, find out who the consumers of your research are and find out if they engage in activities on the Hill, where they could use your research to support certain legislation and policy. Most professors don’t have time to write grants, manage grants, advise and teach, and then lobby on top of that. So, partner with agencies that value psychological science and work together to get the research findings into daily conversations about the public health issues that you study. ●



Read the full interview online at psychologicalscience.org/observer/banishing-bullying.

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