NITOP: TEACHING THAT MATTERS

NEW PLANS FOR *CLINICAL PSYCHOLOGICAL SCIENCE*

2021 JAMES MCKEEN CATTELL FUND PROJECTS

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A Medical Masquerade

COVID-19 and Racial Disparities in Health

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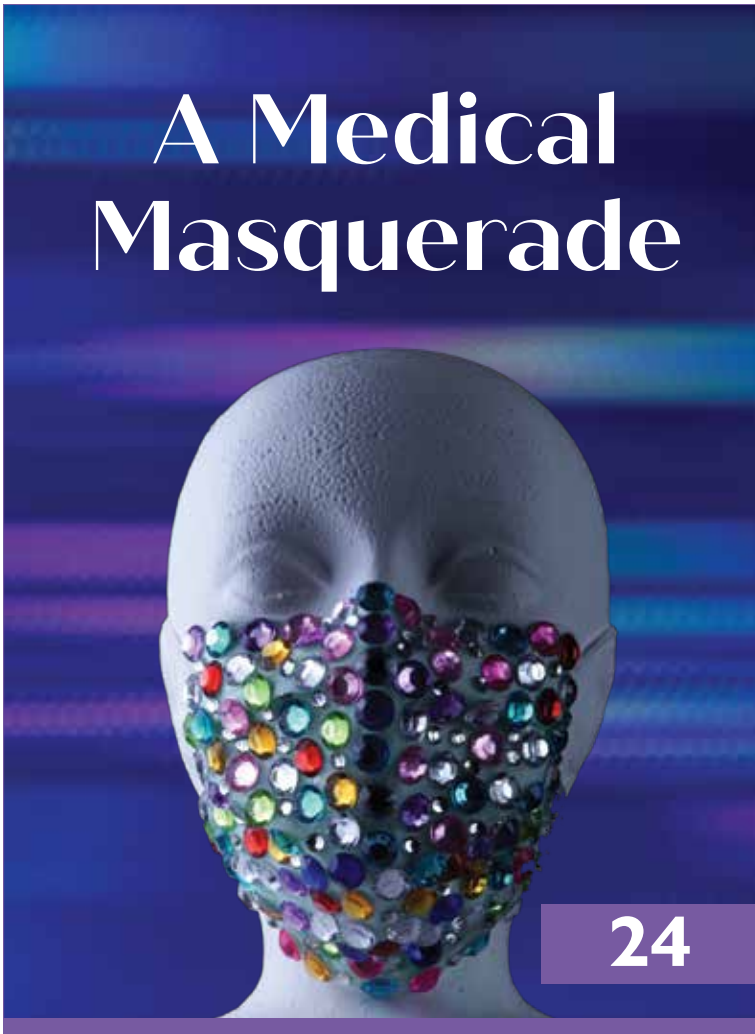

A Medical Masquerade

While the COVID-19 pandemic may be classified as a natural disaster, the socioeconomic conditions that have made communities of color disproportionately vulnerable to the virus are socially constructed. Psychological scientists explore race, and racial health disparities, as a process.

"If we want to save the planet, if we want to prevent another virus like COVID in the years to come, we need to be more mindful and compassionate in how we deal with animals and nature."

—Bassam Khoury, Careers Up Close, Page 50

Departments

Government Research, Funding, and Policy Webinars

Learn about APS webinars, read summaries of past events, and register for upcoming webinars.

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This free series focuses on networking, peer review, online research, and more. View on-demand recordings of all five webinars in this series, and read the summaries.

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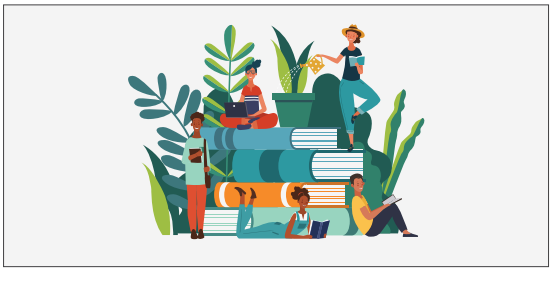
Podcast: COVID-19 and Its Connection to Human Behavior

Panelists discuss the remarkable resilience of many people in the face of COVID-19 and the challenges that lie ahead if we let our guard down. (*September 30*)

Implicit Bias Research Topic

Unconscious bias can lurk below the level of conscious awareness, but researchers are working to uncover more effective methods of reducing these prejudices.



Workplace Diversity Research Topic

When done well, efforts to improve intergroup harmony at work can uplift individuals and lead entire organizations to perform at a higher level.

Join us for a Meeting of the Minds in 2021

APS will host a virtual conference that convenes psychological scientists from around the world, and features the latest research and luminaries in the field.

Program components from both the APS Annual Convention and the International Convention of Psychological Science (ICPS) will be combined into an interactive online two-day event, plus a Virtual Poster Showcase.

Call for Submissions and Registration opening this month!

psychologicalscience.org/convention

BACK TO THE FUTURE: WHY APS STANDS THE TEST OF TIME

By Sarah Brookhart
APS Executive Director (2015–2020)

Perhaps the ultimate APS insider, Sarah Brookhart joined the staff of the new association in 1990, only two years after psychological scientists founded a new society for their science. Over the years, before her retirement at the end of the summer, she ran APS's government relations program, and then its policy and communications program, before becoming deputy director for policy and communications in 2001, deputy director in 2002, and executive director in 2015. In this issue of the *Observer*, I have invited Sarah to reflect on her long career at APS. I hope you will agree that her reflections are invaluable in orienting us to the past—as well as to the future—of our society.

—Shinobu Kitayama
APS President

Who doesn't love the 1980s—Rubik's Cubes, neon leg warmers, Frankie Goes to Hollywood on your Walkman, not to mention the classic movie *Back to the Future*? Happily, the '80s also brought us APS, which was new and exciting in the moment and turned out to be more than a passing fad. Unlike some things that emerged in the '80s, APS has never gone out of style, thanks largely to the foresight of its founders, who endowed the organization with a sustainable vision and mission that have stood the test of time.

I joined APS in its formative years as the first director of government relations, after stints in other psychology and higher education groups and in government. Over the next three decades, I had the rare opportunity to help build the organization and ultimately to lead it as executive director. It is with that long perspective that I share some reflections on what was envisioned for APS, which, simply put, was to provide a clear focus on science and scientific values, to integrate the diverse areas of the field, and to increase public support and understanding of psychological science. I also offer some examples of the ways in which that vision is embodied in the organization's structure and activities.

So, as APS's founding generation passes the torch, let's jump into the DeLorean, fire up the flux capacitor, and revisit some of the attributes that underlie APS's longevity and effectiveness. I am confident those same attributes will enable the organization's current and future leaders to continue the vitality and stability of the organization as it advances psychological science globally.

Sarah Brookhart retired as executive director in September 2020 after 30 years with APS. She was instrumental in the development of the organization and in increasing support for psychological science.

"There Is Something Very Important Going on Here"

At 32, APS is young compared to most other scientific and academic organizations. It was formed in August 1988, giving modern psychological science a separate identity and a collective voice.[1] Past President Mahzarin Banaji recalled the excitement of getting in on the ground floor:

> There are times when each of us knows that there is something very important going on here. In 1988, I had such an experience. A society was forming that was to put front and center a commitment to scientific psychology for the first time….
>
> I had heard… that such an entity could change the future of my science, and I wanted to be part of it. I handed out buttons announcing the new society and attended the now famous first conference where the social hour was held in a parking lot! APS has been "my society" since the moment of its existence. (Banaji, 2010)

[1]The events leading to the establishment of APS are well documented and worth looking at as we consider the future of APS and psychological science in a changing environment (Cautin, 2009a, 2009b; West, 2008a, 2008b).

APS's founders were leading researchers and academics from all corners of this scientifically diverse field, and they baked this diversity into the organization's governance and programs. In doing so, they were determined to embrace the virtues of membership organizations and equally determined to avoid the pitfalls of membership organizations. They ended up creating a streamlined, nonbureaucratic institution dedicated to the shared scientific interests of all areas of the discipline, with the goal of advancing psychological science as a whole.[2] Those shared interests included connecting traditional scientific values with innovative cutting-edge research, providing access to high-quality findings and methods, and presenting—and representing—psychological science in the public arena.

Seeing Your Science in APS

Because APS covers such a range of areas, occasionally we hear the comment that "APS doesn't have enough of my science" in its journals or convention programs. I would ask anyone who feels that way to look at APS from another perspective, one that was expressed by APS's first elected President, Janet Spence, in her inaugural APS Presidential Column:

> Many now recognize… that the specialized organizations to which they belong… are not prepared to conduct a number of important activities on behalf of academic and scientific psychology.… APS is designed to take on these functions in support of scientific psychology as a whole, and… it is the responsibility of all of us to support these efforts. (Spence, 1988)

[2] This intentional design extends to the Board of Directors, the body that oversees the Association's activities. The Board is single-assembly, meaning that Board members are elected on the basis of their scientific leadership and achievements and are members "at large," rather than representing a specific jurisdiction or platform. Great care is taken to ensure the Board is balanced over time in terms of the members' research backgrounds and demographics, and the scientists who serve on the Board serve the entire field.

These sentiments were echoed a few years later by APS Past President Gordon Bower in his Presidential Column on taking stock of APS's objectives:

> APS must strive to attract and represent a broad spectrum of behavioral scientists, ranging from those in neuroscience, through general academic psychology, and industrial-organizational psychology, to applied clinical and research-based practitioners. We understand how specialization of research and applications seduces scientists into small societies with progressively narrower interests. In fact, many of us belong to such specialized societies, and their meetings fulfill a need for communication of specialized interests. However, APS has a different purpose, namely, to re-unite us around common values, goals, and beliefs so that we identify with a larger psychological "family" that can advocate effectively for its common interests on the national scene. Accordingly, the goal of APS is to be broadly representative, to draw our strength from our diversity and our numbers. (Bower, 1992)

APS held its second convention in Dallas in 1990, when the organization was still known as the American Psychological Society. Over the years, the convention grew from a small gathering to thousands of attendees from all over the world.

Presenting cutting-edge research from your area and all other areas is at APS's core, and this is reflected in the organization's journals, conventions, and public outreach. But as set forth by Spence and Bower, APS has an additional, broader mission as the umbrella organization for the field, which is to do what valuable but more narrowly focused scientific groups, or groups where science is not the primary focus, generally cannot. In pursuing this integrative mission, APS connects you and your science with other areas in ways that strengthen the knowledge base and increase the value of everyone's research.

Further, all parts of the field can contribute to APS's activities independent of their proportion in the organization or in the field, and engage in ways that go beyond "parallel play" to allow genuine mutual influence and interaction. APS is uniquely able to create the necessary space and focus in its journals, conventions, and public outreach that integrative research deserves.

From Parallel Play to Integration

The goal of integration across areas within scientific psychology existed from the very beginning of APS. However, it was taken particularly seriously and

The goal of integration across areas within scientific psychology existed from the very beginning of APS.

pushed forward by Past President Walter Mischel, who wrote in one of his Presidential Columns that overcoming the constraints of "artificial traditional disciplinary boundaries rooted in training programs and department structures set a century ago" is essential to progress in psychological science.

> Bridge building opens phenomena that lie at the intersections among multiple disciplines, play out at multiple levels, and cannot be seen within the boundaries of any single discipline or captured in the work of any single investigator or lab. Such area-crossing collaborations allow the best tools and perspectives from different levels and disciplines to be focused on important questions. They also can lead to the development and implementation of new shared tools, driven by the questions that the team jointly wants to answer. (Mischel, 2009)

Among other things, Mischel helped bring to fruition the International Convention of Psychological Science (ICPS), which is explicitly designed to showcase integrative science and to bridge disciplinary, geographical, and cultural boundaries that impede progress in science. The initiative leading to the ICPS unfolded over a number of years and began with a series of small, informal meetings of prominent researchers from across Europe and the United States. Mischel generously hosted the gatherings at his apartment in the Latin Quarter in Paris, where, surrounded by his paintings and other artwork, he, his initiative co-chair APS Past Secretary Gün Semin, and numerous other distinguished scientific leaders discussed exciting future directions for the field and brainstormed ways that APS could facilitate integrative activities globally. One outcome of these discussions was the ICPS, which was first held in 2015 and far exceeded expectations for attendance and impact, as did the subsequent ICPS conventions. Although temporarily postponed by the COVID-19 pandemic, the ICPS will continue to advance the integrative mission championed by APS and will continue to be at the center of APS's efforts on behalf of psychological science as a global enterprise. (For more about the ICPS, visit psychologicalscience.org/conventions/icps.)

APS's integrative mission also involves facilitating new scientific frontiers: Fields such as social neuroscience, behavioral economics, embodied cognition, epigenetics, and others have been the focus of many APS activities. One such area in particular is clinical science. From its earliest days, APS has been committed to bringing science to clinical training and practice. For example, APS supported the exploration of alternative models of accreditation that emphasize innovation, flexibility, and the advancement of knowledge (M. Brewer, 1992). As part of this, APS organized the summit meetings that led to the establishment of the Academy of Psychological Clinical Science and the Psychological Clinical Science Accreditation System, which accredits science-based clinical training that draws on the full spectrum of areas within the field and outside of psychological science as well. The clinical science model, now in place in many of the leading training programs, was introduced widely in the APS journal *Psychological Science in the Public Interest* (*PSPI*; Baker, McFall, & Shoham, 2008) and is embodied in the mission of another APS journal, *Clinical Psychological Science*, which features boundary-crossing basic and applied research on topics ranging from "neurons to neighborhoods" ("Aims and Scope," n.d.).

Speaking for, and Through, Science

As the only dedicated voice for all of scientific psychology, APS has a mandate to engage with science agencies and the U.S. Congress regarding federal support for research. Often this means ensuring that the field has a seat at the table when decisions about agency funding and policies are being made. As one example, APS's advocacy efforts resulted in a separate directorate for behavioral science at the National Science Foundation, which meant that for the first time, our science

The APS staff in 1991, including Alan Kraut (top left), the founding executive director, and Sarah Brookhart (top, third from left), executive director from 2015 through August 2020.

> Psychological science has never been more important, and APS has never been more essential.

was represented at the highest levels of the agency ("NSF Directorate," 1991). That directorate continues to receive congressional support thanks to APS's ongoing advocacy efforts (DeSoto, 2020). In another example, APS helped the Obama administration establish what is now the Office of Evaluation Sciences, in which multidisciplinary teams of scientists use findings and methods from behavioral research to evaluate federal programs and policies ("US Office of Evaluation Sciences," 2018).

More recently, we've seen what happens when psychological scientists aren't at the table when agency decisions are made, as was the case in the inexplicable effort by the National Institutes of Health (NIH) to redefine basic behavioral research as clinical trials. I spent many hours educating congressional appropriators about the deleterious impact of this policy and was able to convince key members of Congress to examine NIH's actions more closely ("NIH Delays Clinical Trials Policy," 2018). At the same time, I expressed the view to Congress that this clinical-trial policy was yet another sign that NIH has a "behavior problem"—meaning that the size and scope of the agency's behavioral science enterprise is inadequate compared to the role of behavior in public health—and I asked the legislators to call on NIH to conduct an evaluation of its health and behavior research support. I'm happy to report that House appropriators have responded positively to that idea (DeSoto, 2020).

While APS is recognized as the voice of psychological science, it's important to note that the reverse is also true: Science is the voice of APS. APS disseminates what psychological research says about topics that are related to policy or otherwise of interest to the public, versus, for example, taking organizational positions in court cases. APS's broad-based public outreach initiatives are especially critical now, with behavior at the center of every major challenge facing the world: social injustice and systemic racism, rampant disinformation, climate change, and many others, including of course the COVID-19 pandemic.

Well before the pandemic, APS published an issue of *PSPI* on vaccination uptake (N. Brewer, 2018), providing empirically supported strategies to improve public health through increased vaccination. That report influenced activities of the World Health Organization ("WHO Working Group," 2019) and continues to have an impact. Similarly, *PSPI* reports on community policing and on eyewitness testimony have great relevance for issues around social justice and racial bias and have influenced justice system policies and guidelines ("Justice Department," 2017). Still other *PSPI* reports shed light on topics ranging from misinformation to treatment of post-traumatic stress disorder and post-disaster mental health issues (psychologicalscience.org/publications/pspi/pspi-archive). *PSPI* and the APS website—which each year engages millions of visitors with psychological science—are important public resources and are just some of the ongoing ways APS is giving voice to science and fulfilling its mission of sharing high-quality psychological science to benefit the public.

There are many other APS successes and milestones that could be detailed here: The organization's innovative journals have risen to the top of the field; APS's many legislative and advocacy achievements have changed the infrastructure of federal support for psychological science; APS's outreach has increased public awareness of psychological science and the role of behavior in daily life; and APS is well on its way to becoming the preeminent organization for psychological science globally, having changed its name in 2005 (from the American Psychological Society) to underscore the organization's dedication to science and its international scope and having established the ICPS, described above. This impressive record of accomplishments is due to the vision of APS's founders and to the efforts of thousands of members over the years who have given their time, expertise, and support to these

Sarah Brookhart at the 2019 International Convention of Psychological Science, Paris.

activities. Going forward, I encourage APS Members and leaders to embrace and reaffirm the organization's unique attributes and mission as they take APS into the next decade and beyond. Psychological science has never been more important, and APS has never been more essential.

Acknowledgements and Thanks

As previously announced, I retired as executive director of APS in September, and while there's no way to acknowledge all of the individuals who have meant so much to me and to APS over the years, I want to offer some words of thanks. First, I'd like to thank APS President Shinobu Kitayama for inviting me to write this column and for generously providing me and APS with his wisdom and leadership during this time of extraordinary challenge in the world. I would also like to express my gratitude to the APS Board for the opportunity to work on behalf of such an important field and help build APS over these many years. Psychological science has the potential to change the world, and I believe APS is the best means of getting there. Special thanks go to the Members of APS and to all the incredible people who have served the field through their involvement with APS—it has been my good fortune to work for and with you. Please keep supporting APS during these difficult times.

My deepest appreciation goes to the APS staff, whose exceptional professionalism and dedication are without parallel and inspired me every day. It has been a privilege to work with you all. And I extend my sincere best wishes and support to the incoming executive director, Robert Gropp, as he takes on this important position. Most of all, I want to thank my mentor and friend Alan Kraut, APS's founding executive director, for his guidance, patience, and support over these past three decades. It would take volumes to do justice to Alan's role in establishing APS and its success, but suffice it to say that no single person has done more, and he deserves lasting credit and recognition for his dedication to the field. APS and the science it represents remain in his debt.

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Paul Eastwick, University of California, Davis, *BBC*, September 20, 2020: What Makes Strangers Click?

Nicholas Epley, The University of Chicago Booth School of Business, **Jay Van Bavel**, New York University, *BBC*, September 14, 2020: The Surprising Benefits of Talking to Strangers.

Robert Feldman, University of Massachusetts Amherst, *The New York Times*, September 11, 2020: Are You Lying More in the Pandemic? Some Certainly Are.

Adam Galinsky, Columbia Business School, **Michael Slepian**, Columbia Business School, *The Wall Street Journal*, September 20, 2020: The Science Behind WFH Dressing for Zoom.

Madeline Heilman, New York University, *The Atlantic*, October 2020: Power Shortage.

More APS Members in the Media online at

psychologicalscience.org/MembersInTheNews

ACADEMIA NEEDS A REALITY CHECK: LIFE IS NOT BACK TO NORMAL

Whether you've welcomed students back to campus or your lab is still operating fully remotely, APS Fellows **June Gruber**, **Jay Van Bavel**, **William A. Cunningham**, and **Leah H. Somerville** make one thing clear: There's no pretending things are back to "business as usual." Acknowledging the ongoing physical and mental health challenges posed by the coronavirus pandemic is essential to weathering the storm, the researchers write.

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Jaclyn Hennessey Ford, Boston College, **Cindi May**, College of Charleston, *Scientific American*, September 8, 2020: We Must Reduce the Trauma of Medical Diagnoses.

Jill Hooley, Harvard University, *The Wall Street Journal*, September 13, 2020: Is It OK to Reveal Your Anxiety or Depression to Your Boss?

Dacher Keltner, University of California, Berkeley, *The New York Times*, October 3, 2020: The Best Live Animal Feeds From Around the World.

George Loewenstein, Carnegie Mellon University, *The Guardian*, September 10, 2020: Facts v Feelings: How to Stop Our Emotions Misleading Us.

Michael I. Norton, Harvard Business School, *NPR*, September 14, 2020: Why Nobody Feels Rich: The Psychology of Inequality.

Bozena Pajak, Duolingo, *EDSurge*, September 10, 2020: The Secret to Learning Any New Language May Be Your Motivation.

Lance Rips, Northwestern University, *The Atlantic*, September 16, 2020: There Won't Be a Clear End to the Pandemic.

Laurie Santos, Yale University, *The New York Times*, October 7, 2020: Laurie Santos Says Self-Care Doesn't Have to Be Selfish.

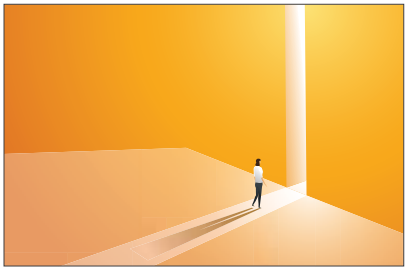
Selected responses to previous coverage

Addressing Racial Equity Through Human-Centered Design

By Karissa Minnich (October 2020)

Very well thought-out analysis! Knowing that this level of empathy is being initiated at even a local government level is groundbreaking and reassuring. Keep up the excellent work!

—Keston Regis, optometrist



The Open-Access Model of Journal Publishing

Presidential Column, by Shinobu Kitayama (September 2020)

My view of the open access model is that it is a form of pay-to-play that creates perverse incentives. OA journals have financial incentives to accept poor-quality work as long as the authors can pay for it. In contrast, paid subscriptions incentivize high-quality work since institutions and individual subscribers won't pay for poor quality journals.

As you point out in your article, there are some excellent OA journals such as the ones that Nature publishes. As a researcher, however, about 98% of the articles that I cite are published in traditional journals.

People like me who work at academic, medical, or other institutions with libraries have free access to many journals beyond the few to which we may individually subscribe. OA is a solution for people who don't have institutional access, but it's a problematic solution. Perhaps a way can be found to provide institution-like access to traditional journals to people who are not affiliated with such institutions through their work. Public libraries give people free access to all sorts of books and magazines; perhaps something similar could be developed for academic journals. The biggest challenge would be the funding model, but that does not seem insurmountable.

—Kenneth E. Freedland, professor of psychiatry and psychology at Washington University School of Medicine and editor-in-chief of *Health Psychology*

It occurs to me that a subscription model for online access might be an answer. Currently my membership in several societies effectively provides me with online access to most of the journals I'm interested in. Young researchers who can't afford the cost of joining all of those societies could be given reduced rates based on their employment status, according to years employed in the field or a similar measure. This could reduce their cost to a manageable level as opposed to OA fees for their publications, two or three of which would likely be prohibitive, and provide necessary income for the journals. Libraries would still provide access for current students.

This still doesn't fix other publication problems such as the proliferation of journals, but could be a step in the right direction.

—Karl Hunt, emeritus professor at Dalton State College

This is a nice article but it makes one serious assumption: that all open-access journals charge APCs (article processing charges). In fact, the majority of open-access journals don't charge APCs. Almost 63% of the 15,259 journals indexed in DOAJ (Directory of Open Access Journals) don't charge any APC whatsoever. If you take non-APC open-access journals into account, it changes the lay of the land quite considerably.

—Dom Mitchell, Directory of Open Access Journals operations manager

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NOT ONE BUT MANY MODELS OF OPEN-ACCESS PUBLISHING

By David M. Condon (University of Oregon), Jack Arnal (McDaniel College), Grace Binion (Emory University School of Medicine), Benjamin Brown (Georgia Gwinnett College), Katherine S. Corker (Grand Valley State University)

As members of the Scientific Advisory Board for PsyArXiv (psyarxiv.com), we are responding to the invitation for feedback in the recent column by APS President Shinobu Kitayama entitled "The Open-Access Model of Journal Publishing." The piece provides an insightful introduction to open access (OA) from APS leadership, and we were particularly enthusiastic about the news that *Advances in Methods and Practices in Psychological Science* (*AMPPS*) will become a fully OA journal in 2021. Our response adds to Dr. Kitayama's thoughts by addressing topics that warrant further explanation. These topics include the need to situate outlets like PsyArXiv in discussions about OA, as well as the broader need to distinguish between various types of OA publication models.

What Is PsyArXiv?

PsyArXiv is an OA preprint repository for psychological research. Established in 2016, PsyArXiv serves the psychological science community, just as bioRxiv and arXiv serve the disciplines of biology, physics, mathematics, computer science, and related fields. Despite its short history, PsyArXiv has been widely embraced among psychological researchers. The service is already receiving an average of nearly 20 new manuscript submissions *per day*, download rates of more than 5,000 per day, and a 147% increase in pageviews from 2019 to 2020 to date. Works deposited in PsyArXiv enjoy high discoverability regardless of the ultimate journal outlet, although it is important to note that a substantial proportion of these works have not (yet) undergone peer review. Each preprint is given a unique digital object identifier (DOI), indexed by Google Scholar, and briefly evaluated for consistency with PsyArXiv's terms of use by a volunteer member of our moderation team. The costs of providing these services have historically been supported by the Center for Open Science and, more recently, by the university library systems of our member institutions. We think our rapidly growing usage rates indicate clear demand for access to psychology research findings among consumers who lack institutional access, including members of the general public.

How Does PsyArXiv Relate to the Open-Access Models Kitayama Mentions?

The OA movement has proliferated in numerous directions over the last two decades, and a color-naming system has evolved in an attempt to simplify this diversity. PsyArXiv is classified in this system as "green" OA because it is a repository for authors who seek to freely share their scholarly output with both consumers (readers) and producers of research (Samberg et al., 2018). The niches that Kitayama has described—serving "cutting-edge" and "nontraditional" research projects—are both examples of "gold" OA. These outlets are peer-reviewed journals that publish open articles and make use of article processing charges (APCs). This approach differs substantially from traditional publishing models where peer-reviewed articles are published without expense for the authors, but at substantial expense to libraries; further, articles are locked away behind a "paywall." Many readers of the APS *Observer* are likely familiar with hybrid approaches as well (sometimes called "paid open access"). This model gives authorship teams the choice, after peer review, to pay APCs to add OA publishing to their accepted paper, or they can choose to publish without expense by effectively signing away the licensing rights to their article. Many additional variations exist, each with its own color-name (see Barnes, 2020, and Samberg et al., 2018).

Though the traditional subscription-based publishing model is clearly under pressure, there is little consensus about the best long-term fix. Many of the largest consumers of research (i.e., university libraries) have recently sought to negotiate "transformative agreements" that seek to resolve the unsustainable financial burdens of bundled subscription agreements—the so-called "big seals" between libraries and publishers. The downstream consequences of this unresolved turmoil has caused confusion for scientists who seek to publish their findings in prestigious and widely-accessible outlets on a tight budget. Kitayama's summary highlights the tension among these goals, but only within the context of gold OA models. In short, more prestigious outlets tend to be more

expensive (though the correlation is not perfect), and there are good reasons to be concerned about this association.

Can PsyArXiv Help to Address These Concerns?

We think it does. At the most fundamental level, PsyArXiv complements all forms of publishing by equitably providing psychological researchers with a free, simple, and immediate outlet that can be accessed by anyone with reliable Internet service. This gives early access to timely research findings, provides an alternative access option for works that are not published openly, increases discoverability (Norris et al., 2008; Lewis, 2018), and reduces the file-drawer problem (Franco et al., 2014). Beyond this, the PsyArXiv infrastructure allows for further innovation in psychology publishing that can build on the benefits of OA. These might include overlay journals, which have gained considerable attention in other scientific disciplines recently and provide peer-review and/or editorial curation of content posted on arXiv (for examples, see *Discrete Analysis* and *The Open Journal of Astrophysics*). Models like these offer the potential for niche journals to flourish in a manner that would not be viable within the traditional publishing ecosystem. In short, we hope that researchers, including submitters to APS journals, will take advantage of APS's generous article-posting policies and make copies of their pre- and post-publication work available for the community at PsyArXiv, thereby helping the community capitalize on these many benefits.

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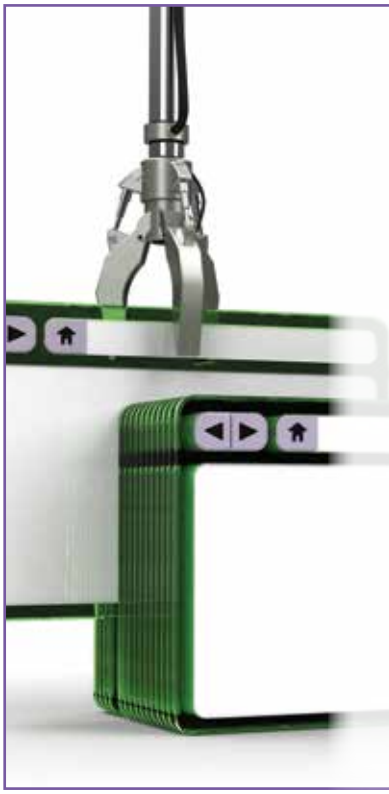

People Reject Algorithms in Uncertain Decision Domains Because They Have Diminishing Sensitivity to Forecasting Error

Berkeley J. Dietvorst and Soaham Bharti

People may be unwilling to use algorithmic decision-makers (e.g., virtual doctors, self-driving cars) in inherently uncertain domains, such as financial investing or medical decision-making. In nine studies, Dietvorst and Bharti showed that people have diminishing sensitivity to forecasting errors—they perceive "relatively large subjective differences between different magnitudes of near-perfect forecasts (the best possible forecasts that produce little to no error) and relatively small subjective differences between forecasts with greater amounts of error." As a result, they are less likely to choose the best decision-makers in domains that are more unpredictable (e.g., with random outcomes vs. with outcomes determined by an equation) and instead tend to prefer decision-makers based on their perceived likelihood of producing a near-perfect choice and with high variance in performance. This leads people to favor riskier and often worse-performing decision-makers, such as human judgment, in uncertain domains.

Psychological Science
https://journals.sagepub.com/doi/full/10.1177/0956797620948841

PSYCHOLOGICAL SCIENCE

Using Machine Learning to Generate Novel Hypotheses: Increasing Optimism About COVID-19 Makes People Less Willing to Justify Unethical Behaviors

Abhishek Sheetal, Zhiyu Feng, and Krishna Savani

Optimism may nudge people to avoid unethical behaviors, such as hoarding potentially scarce resources and violating social distancing during the pandemic. Sheetal and colleagues used machine learning to predict whether individuals perceived unethical behaviors as justifiable, on the basis of their answers to a survey about values. This model identified low optimism about the future of humanity as a top predictor of unethical behavior. This finding was supported by another experiment in which participants who read an optimistic scenario about COVID-19 were less willing to justify hoarding and violating social distancing than participants who read a pessimistic scenario.

https://journals.sagepub.com/doi/full/10.1177/0956797620959594

Behavioral Immune Trade-Offs: Interpersonal Value Relaxes Social Pathogen Avoidance

Joshua M. Tybur, Debra Lieberman, Lei Fan, Tom R. Kupfer, and Reinout E. de Vries

People may engage in infection-prone acts with people they value, such as friends and likable strangers. Three studies indicate that individuals are more comfortable with acts that can expose them to infection (e.g., touching a handkerchief someone used to blow their nose) when interacting with someone they know and like or someone they don't know but perceive as honest and agreeable than with someone they know and dislike or a stranger they perceive as dishonest or disagreeable. These findings suggest that individuals are more comfortable with exposure to pathogens from people they value, potentially leading to behavior that can help to spread infections.

https://journals.sagepub.com/doi/full/10.1177/0956797620960011

ADVANCES IN METHODS AND PRACTICES IN PSYCHOLOGICAL SCIENCE

Persons as Effect Sizes

James W. Grice, Eliwid Medellin, Ian Jones, et al.

Grice and colleagues show how to compute and report the answer to the question "What percentage of people in my study behaved or responded in a manner consistent with theoretical

expectation?" For many studies, they show, researchers can calculate the percentage of participants who matched the theoretical expectation. This percentage essentially treats people as effect sizes, a concept that scientists, professionals, and laypersons can understand. This percentage can reveal novel patterns of data that further advance theories in psychological science.

https://journals.sagepub.com/doi/full/10.1177/2515245920922982

CURRENT DIRECTIONS IN PSYCHOLOGICAL SCIENCE

Cultural Dynamics for Sustainability: How Can Humanity Craft Cultures of Sustainability?

Yoshihisa Kashima

Kashima suggests that humanity faces two types of adaptation problems related to achieving sustainable development: environmental challenges of climate change and humanitarian challenges of ensuring well-being for all. As a response, Kashima proposes the development of cultures of sustainability that encourage sustainable lifestyles. One of the critical ingredients of these cultures is conversations about sustainability norms. Participation by individual citizens, along with the necessary institutional responses and multidisciplinary approaches, can drive the changes necessary to craft cultures of sustainability.

https://journals.sagepub.com/doi/full/10.1177/0956797620960011

Probabilistic Biases Meet the Bayesian Brain

Nick Chater, Jian-Qiao Zhu, Jake Spicer, Joakim Sundh, Pablo León-Villagrá, and Adam Sanborn

Chater and colleagues propose that the brain does not calculate probabilities but rather approximates probabilistic calculations by drawing samples from memory or mental simulation. The sampling models suggested by Chater and colleagues can explain many classic judgment and decision-making findings, including heuristics and biases such as availability, representativeness, and anchoring and adjustment. The idea that humans have a probabilistic mind based on sampling may allow for a reconciliation between the rational models of Bayesian cognitive science (suggesting that the brain can represent and perform perfect probabilistic calculations) and the apparently nonrational findings of judgment and decision-making research.

https://journals.sagepub.com/doi/full/10.1177/0963721420954801

CLINICAL PSYCHOLOGICAL SCIENCE

Trait Negative Affect Interacts With Ovarian Hormones to Predict Risk for Emotional Eating

Megan E. Mikhail, Pamela K. Keel, S. Alexandra Burt, et al.

High trait negative affect (NA) and specific ovarian hormone levels (low estradiol and high progesterone) increase the risk for emotional eating, this research suggests. Women provided saliva samples for hormone measurement and rated their NA and emotional eating daily for 45 days. Mikhail and colleagues found that women who reported NA regardless of the situation (i.e., trait NA) and had low estradiol and high progesterone were more likely to report emotional eating than others. Women with a clinical history of binge-eating episodes saw these effects amplified.

https://journals.sagepub.com/doi/full/10.1177/2167702620951535

Does Distanced Self-Talk Facilitate Emotion Regulation Across a Range of Emotionally Intense Experiences?

Ariana Orvell, Brian D. Vickers, Brittany Drake, et al.

Distanced self-talk—using one's name and non-first-person singular pronouns—appears to promote emotion regulation when people reflect on past and future negative experiences that vary in emotional intensity. Participants reflected on negative experiences using distanced self-talk (e.g., "Why are you feeling this way, [Name]?") or immersed talk (e.g., "Why am I feeling this way?"). Compared to participants who used immersed talk, those who used distanced self-talk felt less negatively regardless of the type of negative experience (e.g., health, financial issues), the emotion involved (e.g., anger, frustration), and whether the experience had already occurred or could occur in the future.

https://journals.sagepub.com/doi/full/10.1177/2167702620951539

PERSPECTIVES ON PSYCHOLOGICAL SCIENCE

Shifting Minds: A Quantitative Reappraisal of Cognitive-Intervention Research

David Moreau

Moreau shows that cognitive interventions in the areas of brain training, video gaming, mindset, and stereotype threat might not effectively improve individual performance. He provides a quantitative reappraisal of the findings summarized in recent meta-analyses and shows that the effect-size distributions in these areas are best explained by multimodal characteristics that are not common in psychology. As a result, the characteristics of the effect sizes in cognitive-intervention research are largely unexplained by current theoretical frameworks. Thus, he argues for constructive skepticism in evaluating claims of cognitive improvement after cognitive interventions and for caution when this research influences large-scale policies.

https://journals.sagepub.com/doi/full/10.1177/1745691620950696

WOMEN IN PSYCHOLOGICAL SCIENCE: IDEAS, RESEARCH, AND ACTION

Three years ago at a psychology conference, a small group of female researchers and university faculty members observed that, compared with their male counterparts, few women had received early-career awards. Some reflected on their experiences of bias in the workplace and the treatment they had received during maternity leave and promotion decisions.

These observations were the catalyst for a systematic assessment of the literature in the field to more fully define the standing of women in psychological science, ultimately resulting in the publication of "The Future of Women in Psychological Science" in the journal *Perspectives on Psychological Science*.

"Many of our fellow female psychologists were interested in exploring women's roles and status within psychological science, signed up to coauthor, and offered suggestions for other authors to include," said APS Fellow **June Gruber** (University of Colorado, Boulder), lead author of the article. "Very quickly, we had a large and active authorship group of over 50 women psychological scientists."

In "Observations," the names of APS Fellows and current APS Members are denoted by boldface type.

A Call to Action

Over the past several decades the face of science has evolved from a mostly White, male cohort to be more diverse and inclusive. This is particularly true in the field of psychology, which has seen a rapid rise in the percentage of bachelor's degrees awarded to women, from approximately 45% in the early 1970s to well over 70% in 2017.

Although the gender distribution of undergraduate degrees is encouraging, it does not paint the full picture. As detailed in the report, more work is needed to close the academic, professional, and financial gender gaps that continue to permeate all scientific disciplines, including psychological science.

As the coauthors initially observed, there was a dearth of data on the standing of women in psychological science. This raised two important questions the study aimed to address: What are the present gender gaps in psychological science? And why do these gaps exist?

The paper introduces 10 issues of analysis. Three present data on gender gaps that exist in psychological science today. The remaining seven identify the mechanisms that allow gender gaps to persist in psychological science.

Where Are the Present Gender Gaps in Psychological Science?

The authors examined gender gaps in three domains: career advancement, financial compensation, and service assignment and practices.

They found that women are still underrepresented among veteran psychological scientists, although psychology is doing comparatively better than other fields in closing the gender gap in early-career advancement. But the gap doesn't stop there.

On average, men publish more psychological science articles than women every year across most stages of their careers, and gender pay gaps persist despite shrinking over time. On average, a woman's salary as an associate professor is 92% that of a man's across all institutions; for full professors, it falls to 88%.

In addition, women are more likely to perform lower-status services for their universities, institutions, and broader scholarly communities, which Gruber and colleagues define as an integral part of academic life. They also perform more services that may go

unnoticed (e.g., informal mentorship, especially given the large percentage of female psychology majors).

And although women earn more doctoral degrees in psychology than men and are as or more likely than men to be hired as assistant professors, they are less likely to submit, receive, and renew grants or to have comparable publication and citation rates.

Why Do Gender Gaps Exist in Psychological Science?

Gruber and her colleagues tackled this question by considering systemic, interpersonal, and intrapersonal factors in seven issues affecting women's success in psychological science. Systemic factors focus on the broadest, macro-level perspectives. Interpersonal factors shape men and women's behaviors and perceptions. Intrapersonal factors affect women's choices and preferences and, consequently, may also affect women's career advancement and success.

Factors were not mutually exclusive, which led the study's authors to conclude early that gender-gap-facilitating mechanisms are complex and embedded deeply in workplace and academic structures.

They analyzed issues including lifestyle roles and work-family conflict, gender biases, attainment of positions of power, intersectionality, harassment and incivility, agency, self-esteem, promotion, and a sense of a lack of belonging.

Results indicated that systemic pressure for women to serve as caregivers may contribute to lower publication rates, less pursuit of tenure-track positions, and less research prominence. Additionally, interpersonal and intrapersonal gender biases create stereotypes that are more likely to associate scientific work and brilliance with men than women.

The researchers found that both women and men are socialized to accept and conform to gender stereotypes and will seek out careers that enforce such stereotypes.

The influence of stereotypes and biafses aside, women also experience sexual harassment more often than men, a problem results suggest will persist for women in the workplace.

Apart from illustrating gender gaps and the mechanisms that allow them to exist in psychological science, researchers also make recommendations for psychological scientists to reduce and perhaps even close the gender gap.

What's Next? The Path Forward for Women in Psychological Science

Gruber and colleagues make a series of recommendations to address the problems their report explores, including educating and redesigning hiring and award committees, providing transparency in compensation, offering gender-bias training, providing more support for families and underrepresented groups of women, and collecting and maintaining data on the efforts made to narrow the gender gap.

Systemic pressure for women to serve as caregivers may contribute to lower publication rates, less pursuit of tenure-track positions, and less research prominence.

Although the researchers found that many mechanisms that allow the gender gap to remain are deeply rooted in systematic practices, they also outline smaller steps toward broader inclusivity. These include strategies as simple as encouraging female colleagues to invite their own colleagues to events and holding meetings at hours that don't compete with family time.

The authors acknowledge the strides the field of psychology has taken to bridge the gender gap. However, despite the accomplishments of women in psychological science, the researchers believe work remains to reach true parity.

"Although we have made some progress over time, there remain significant and important issues to address to chart a path of equity for women looking ahead," Gruber said.

See the full article with reference list at psychologicalscience.org/observer/gender-parity.

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CLINICAL PSYCHOLOGICAL SCIENCE EDITOR SCOTT O. LILIENFELD (1960–2020)

APS James McKeen Cattell Fellow **Scott O. Lilienfeld**, the editor of *Clinical Psychological Science* from 2016 until late 2019, died of pancreatic cancer on September 30, 2020. The Samuel Candler Dobbs Professor of Psychology at Emory University and a transformative leader in the field of clinical psychological science, his contributions covered a broad expanse of areas, including defining the field of clinical psychological science, combating threats to psychological science posed by pseudoscience and questionable science, and providing critical appraisals of projective testing used by mainstream clinicians and court systems.

"It was a long and circuitous path," he said of his career choice of psychology in a 2010 interview in the *Observer*, "especially because my first loves were the natural sciences, paleontology and astronomy in particular."

He went on to author more than 350 publications, garnering more than 36,000 citations and enlightening a generation of researchers on the substance of psychological science and the process of learning to think scientifically. Besides serving as editor in chief of *Clinical Psychological Science*, he was an associate editor of *Archives of Scientific Psychology* and served on several other editorial boards, including *Journal of Abnormal Psychology* and *Assessment*. He also served as president both of the Society for a Science of Clinical Psychology and the Society for the Scientific Study of Psychopathy.

In addition, Lilienfeld was a tireless ambassador representing the field of psychological science to nonscientific audiences. In the address for his 2013 APS James McKeen Cattell Fellow Award, which recognizes a lifetime of outstanding contributions to the area of applied psychological research, Lilienfeld examined the importance, prevalence, and sources of public and political skepticism of psychology, offering recommendations for enhancing the public perception of psychology as a scientific discipline.

See the full article online at psychologicalscience.org/observer/Scott-Lilienfeld-Obituary *for more on Lilienfeld's contributions to the field.*

HINSHAW RECEIVES SARNAT PRIZE FOR RESEARCH ON ADHD

APS James McKeen Cattell Fellow **Stephen P. Hinshaw** has received the 2020 Rhoda and Bernard Sarnat International Prize in Mental Health for his work on attention-deficit/hyperactivity disorder (ADHD) in children. The Sarnat Prize, awarded by the National Academy of Medicine, is presented annually to an individual or organization in recognition of outstanding achievement in improving mental health through basic science, clinical applications, and public policy.

Hinshaw, a professor of psychology, psychiatry, and behavioral sciences at the University of California's Berkeley and San Francisco campuses, has led the Multimodal Treatment Study of Children with ADHD since 1992. Through this and other projects on attention and impulse control in children, Hinshaw has increased understanding of the psychobiological basis of ADHD and how enhanced parenting practices may help address children's ADHD-related challenges at school.

Hinshaw received the Sarnat Prize, which includes a medal and a $20,000 cash award, virtually during the National Academy of Medicine's annual meeting on October 19, 2020.

See the full article at psychologicalscience.org/observer/Hinshaw-Sarnat *to view his 2016 APS James McKeen Cattell Fellow Award Address on potential ADHD interventions and how to reduce the stigma around mental illnesses and disorders.*

RICHESON RECEIVES SAGE-CASBS AWARD FOR RESEARCH ON DISCRIMINATION AND DIVERSITY

APS Fellow **Jennifer Richeson** has received the 2020 SAGE-CASBS Award for her broad-ranging and influential explorations of psychological phenomena related to cultural diversity, including original insights into the cognitive, affective, and behavioral elements of intergroup dynamics. A social psychologist at Yale University, Richeson uses a broad range of empirical methods to examine the potential cognitive "costs" and mutual misperceptions associated with intergroup interactions. She served on the APS Board of Directors from 2009 to 2012.

Richeson has authored or coauthored more than 100 peer-reviewed journal articles and book chapters and received numerous awards and honors, including a John D. and Catherine T. MacArthur Foundation Fellowship (2007), a John Simon Guggenheim Memorial Foundation Fellowship (2015), and a Carnegie Foundation Senior Fellowship (2020).

In addition to receiving a cash prize for the SAGE-CASBS Award, Richeson will deliver a public lecture at the Center for Advanced Study in the Behavioral Sciences on a date to be announced.

See the full article at psychologicalscience.org/observer/Richeson-SAGE-CASBS *to view Richeson's 2016 Inside the Psychologist's Studio interview on her early career influences, research, and more.*

FRIENDLY AND OPEN SOCIETIES SUPERCHARGED THE SPREAD OF COVID-19

The speed at which COVID-19 initially spread across the globe was alarming. Many biological and sociological factors fueled these startling infection rates, but certain countries seemed more susceptible to early widespread infections than others. New research published as a fast-track article in the journal *Psychological Science* singles out one powerful factor fueling the initial spread of the virus, a cultural characteristic known as relational mobility—a measurement of social openness, or the opportunity people have to interact with others of their choosing. The new findings show a direct correlation between each country's social openness and its rates of both confirmed cases of COVID-19 and related deaths during an early period of countrywide outbreaks.

"Cultures that are shown to have a high level of relational mobility may be paying the price by enduring a faster spread of COVID-19," said **Cristina E. Salvador** (University of Michigan), lead author of the paper. "These countries must find a way to fight against COVID-19 and other potential disease outbreaks without compromising their ideals of freedom and liberty."

The researchers analyzed how fast COVID-19 cases and deaths spread during the initial 30-day period after each country had at least one death and 100 cases. They then examined whether this spread was greater for countries high (vs. low) in relational mobility, as determined from a 2018 Facebook survey of 16,939 people from 39 countries. To isolate the impact of relational mobility, Salvador and her colleagues took into account countries' demographic factors, such as population density, population size, median age, and GDP, and cultural factors, such as individualism and the rigidity with which social norms are enforced. These findings underscore the need for social distancing to "flatten the curve," especially in countries that value social openness.

See the full article with reference list at psychologicalscience.org/observer/open-societies.

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ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

GOVERNMENT FUNDING FOR PSYCHOLOGICAL SCIENCE IN JAPAN: A BRIEF OVERVIEW

Broad grant distribution, bottom-up research priorities fuel this R&D powerhouse

The Diet Building in Tokyo. The National Diet is Japan's bicameral legislature, composed of the House of Representatives and the House of Councillors.

Japan has been at the forefront of scientific and technological advancements for decades, producing countless influential scientists and important research discoveries. Thanks to a robust system of government funding for science, Japanese psychological scientists can help to drive these discoveries and produce curiosity-driven research. If there's one government funding program in particular that APS members should know about, it's KAKENHI: Grants-in-Aid for Scientific Research.

Is there something APS can do to help you better understand and track funding opportunities in your country? Let us know by emailing aps@psychologicalscience.org.

Japan is a research and development powerhouse. As of 2017, the country was third globally in gross domestic expenditure on research and development (GERD), trailing only the United States and China. Of Japan's $171 billion (translated to U.S. dollars) in GERD, $21 billion (13%) went toward basic research, according to the U.S. National Center on Science and Engineering Statistics (National Science Board, 2020). By percentage of GERD spending for basic research, Japan is fifth in the world, behind France, the United Kingdom, the United States, and South Korea.

The KAKENHI program is managed by JSPS, the Japan Society for the Promotion of Science (日本学術振興会). Established by an imperial endowment in 1932, JSPS is one of the country's premier funding agencies for research. KAKENHI offers single and multiyear research grants for all fields, from the humanities to the social and natural sciences, and it funds research in both basic and applied sciences. According to JSPS (2019), KAKENHI's 2019 program budget is around 237 billion yen (roughly $2.2 billion USD) and accounts for 50% of all competitive government funding for scientific research. Grants are distributed through competitions supporting curiosity-driven research based on creative ideas.

Additional research funding in Japan comes from universities and the country's Ministry of Education, Culture, Sports, Science and Technology (MEXT), among other sources. MEXT also has some KAKENHI offerings.

On the international stage, KAKENHI both differs from and is similar to other countries' funding programs in terms of the competitiveness of grant funding, the intensity of applications, and the actual monetary values of funding awards.

KAKENHI accepts and funds approximately 25% to 28% of research applications. This "success rate" was consistently around 20% until 2011, when it spiked to 29% because of programmatic changes and the adoption of multiyear research grants aimed at allowing researchers greater flexibility and reducing administrative burden. (The program's ➡

See all government funding opportunities at the Federal Research, Funding, and Policy page on the APS website: psychologicalscience.org/policy.

relative budget peaked that year as well, to 263 billion yen; JSPS, 2019.) In comparison, the average success rate of research project grants is around 20% at the U.S. National Institutes of Health (NIH; see Lauer, 2020) and roughly 12% at the European Research Council (ERC).

KAKENHI has a "bottom-up" structure—that is, the program generally does not set overarching research priorities but rather chooses what to fund depending on the requests of the scientific community. This is similar to the approach that agencies such as the ERC use. In contrast, many funding agencies in the United States are more "priority driven," meaning the agencies decide research needs.

APS spoke with several members about the psychological science research enterprise in their country.

"Compared to funding agencies in the U.S., like NIH and [the National Science Foundation], KAKENHI and grants from MEXT are less competitive," said Keiko Ishii, a social psychologist at Nagoya University who studies cognition and individual differences in trust and reciprocity. "Fortunately, I have gotten grant funding through KAKENHI or/and grants from MEXT since I got my first job. Thanks to the funding support, I have published more than 60 articles."

APS President Shinobu Kitayama (University of Michigan) studied at Kyoto University before receiving his PhD in the United States. He found it easier to get small amounts of money for research grants in Japan than in the United States, where the number of applications and larger grant sizes make for a very competitive funding environment. Some researchers believe grant money is spread more widely in the Japanese system, allowing for more researchers to receive smaller grants.

Kou Murayama (University of Tübingen), who studied at the University of Tokyo, draws a similar comparison between funding systems in the United Kingdom, where he used to work, and in Japan. "The money is distributed well to wide range of researchers in psychology" in Japan, he said.

> KAKENHI accepts and funds 25% to 28% of research applications. The average success rate of research project grants is around 20% at the U.S. National Institutes of Health and roughly 12% at the European Research Council.

KAKENHI divides research into two categories: "Scientific Research" and "Transformative Research."

Within the Scientific Research category, Grants-in-Aid for Scientific Research fall into four categories based on budget range. Grants-in-Aid for Early-Career Scientists support projects for researchers who are less than 8 years out from receiving their PhD, and Grants-in-Aid for Young Scientists support researchers under 39 years of age.

There are two types of grants under the Transformative Research category. Grants for Scientific Research on Innovative Areas seek to significantly advance existing areas of research and form new ones. Challenging Research (Pioneering/Exploratory) grants support researchers who are radically transforming research directions and existing research frameworks.

The Transformative Research and Scientific Research categories also fund what is called "Specially Promoted Research," or outstanding projects that develop new scientific research fields, as well as a Fund for the Promotion of Joint International Research, to encourage international collaboration in research. A full list of grants and a brief explanation of them is available on the JSPS-KAKENHI website (jsps.go.jp/english/programs/index.html).

In addition to these research opportunities, JSPS organizes four programs designed to encourage pre- and postdoctoral researchers to conduct joint research projects in Japan. The program also offers the JSPS Prize, which recognizes and supports researchers conducting high-quality research early in their career.

Along with its KAKENHI style funding, "MEXT offers support for the research infrastructure at private universities in Japan," said Jun'ichi Katayama, a cognitive psychophysiologist at Kwansei Gakuin University (KGU). "Thanks to support programs like the Project of Academic Frontiers' Advancement or the Supported Program for the Strategic Research Foundation, the Center for Applied Psychological Science at KGU has been a center for academic-industrial cooperation, sharing the outcome of joint studies with society since 2002."

With so many opportunities for funding in Japan, keeping scientists informed on open calls for research proposals is important. Many universities have systems in place that inform faculty of relevant funding opportunities, proving helpful to researchers like Ishii.

"The administrative research support section at Nagoya University sends posted information regarding funding to all the researchers every day," said Ishii. "At Kobe University, where I worked before coming to Nagoya, the system was similar."

Additionally, domestic science associations send information about funding opportunities to their members.

For psychological scientists who are interested in international collaborations with Japanese colleagues, JSPS offers opportunities for short- and long-term visiting researchers in Japan. As with many collaborative mechanisms of this type, international collaborators typically need their own funding sources, as grants in Japan often support only Japanese research-

In recent news, issues have arisen between new Japanese Prime Minister Yoshihide Suga and the Science Council of Japan (SCJ) over Suga's veto of six academics who were recommended by SCJ for positions in the General Assembly, the council's governing body. According to Science, *"all six of the scholars had criticized legislation adopted by the previous administration, during which Suga was chief cabinet secretary" (Normile, 2020). Critics see this as a threat to academic freedom in the country, and SCJ wants Suga to explain his decision for the veto. SCJ represents over 800,000 scholars in all disciplines and gives policy recommendations, promotes scientific literacy, and promotes international cooperation.*

ers. Researchers generally believe an increase in collaboration and exchange of ideas would improve the quality of psychological science work domestically in Japan as well as increase the quality of international work.

Speaking broadly about psychological science in Japan and in the United States, where he now works, Kitayama described differences in how Japanese and U.S. scientists "package" research ideas and explain the conceptual picture their data show, sometimes resulting in difficult translations between countries. Research training in the United States encourages a "show-and-tell" of the latest findings and frees scientists to say what comes to mind to generate ideas, he said. Training in Japan differs from that, meaning that crossing over from one country to the other can be difficult for scientists.

Kitayama believes it is very useful for researchers to understand both countries' systems and to be able to move back and forth between systems and benefit psychological science through collaboration. He noted, however, that cultural differences can create roadblocks to collaboration and the exchange of ideas. Allowing open spaces for Japanese researchers to share their research ideas and projects could help bridge some of the cultural barriers to collaboration, he believes.

A special thanks to Jun'ichi Katayama of Kwansei Gakuin University, Keiko Ishii of Nagoya University, Kou Murayama of the University of Tübingen, and APS President Shinobu Kitayama of the University of Michigan for speaking to APS for this article.

— Kekoa Erber
APS Government Relations Associate

Important Links

Overview of funding programs: jsps.go.jp/english/programs/index.html

Pre- and postdoctoral fellowships in Japan: jsps.go.jp/english/e-fellow/index.html

Outline of Grants-in-Aid for Scientific Research (KAKENHI): jsps.go.jp/english/e-grants/index.html

About JSPS: jsps.go.jp/english/aboutus/index.html

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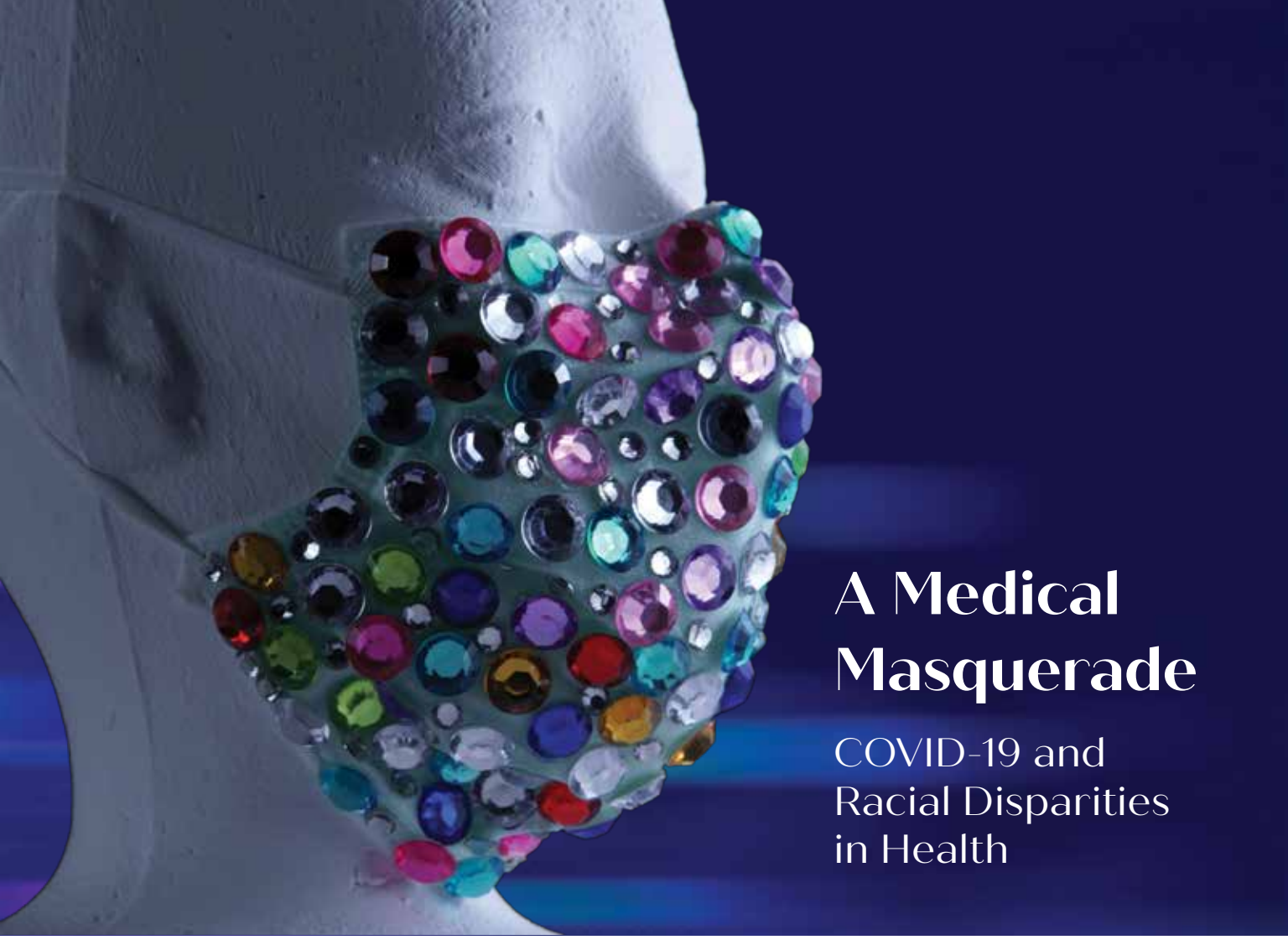
QUOTE OF NOTE

"*We are very, very concerned about our early-stage investigators and our trainees. None of us want to lose a generation of investigators. We know that early-stage investigators and trainees probably have a unique set of issues, over and above what many people are dealing with.*"

— **Larry Tabak,** principal deputy director at National Institutes of Health, reiterating the agency's support and flexibility regarding research grants affected by COVID-19 in a September 30 meeting convened by Research!America.



A Medical Masquerade

COVID-19 and Racial Disparities in Health

As of October 16, 2020, the novel coronavirus known to cause COVID-19 has infected over 39 million people, contributing to more than 1 million deaths worldwide—but while the effects of this pandemic have been global, they have not been universal. In the United States in particular, the COVID-19 pandemic has had a disproportionate impact on people of color, with Black, Hispanic/Latino, and Native American individuals testing positive for the virus at more than 2.5 times the rate of Whites and being significantly more likely to die from a coronavirus infection, according to the Centers for Disease Control and Prevention (CDC).

By Kim Armstrong, APS Staff Writer

This heightened risk is nothing new. While COVID-19, as a pandemic, may be classified as a natural disaster, the socioeconomic conditions that have made communities of color disproportionately vulnerable to the virus—including segregation, poverty, and discrimination—are socially constructed, as Sage J. Kim and Wendy Bostwick (University of Illinois) explained in a recent article in *Health Education and Behavior*. In their analysis of COVID-19 deaths in Chicago, for example, Kim and Bostwick found that cases were clustered on the south and west sides of the city, predominantly African American areas where people were also more likely to have multiple chronic diseases such as asthma and hypertension, which may further increase individuals' vulnerability to coronavirus.

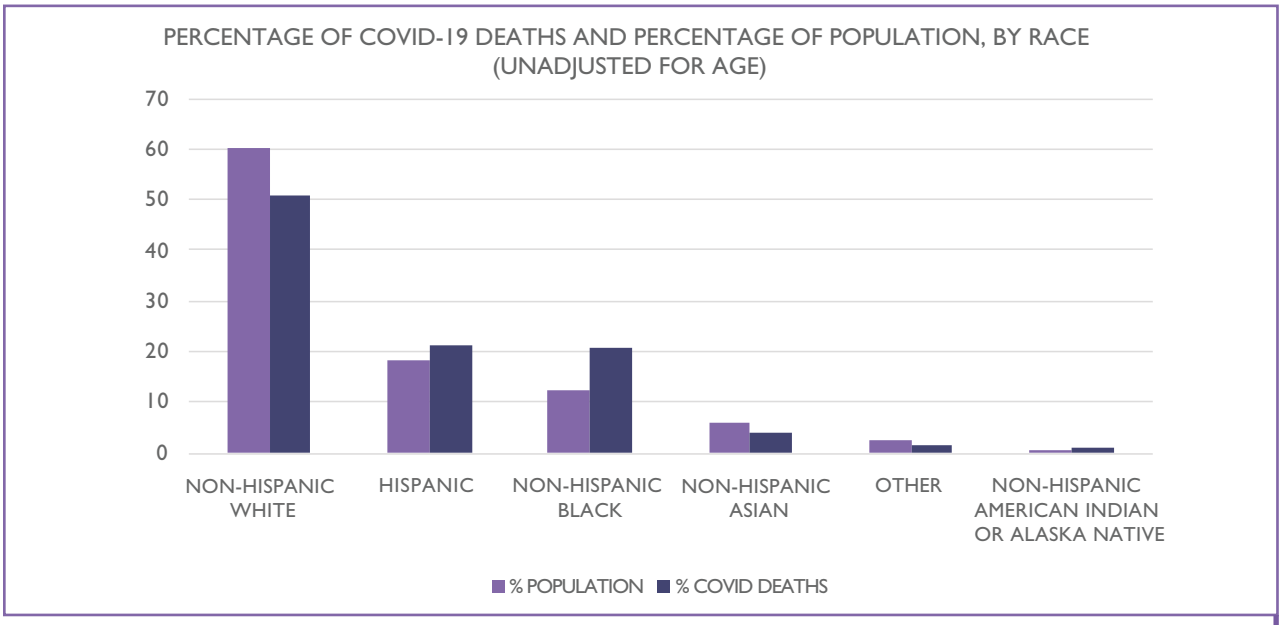
People of color are also more likely to be employed as essential workers, according to the CDC. This may increase their exposure to COVID-19 through overcrowded conditions in farms and factories, in addition to workplaces such as grocery stores and health care settings that require face-to-face interactions with members of the public, who may or may not wear masks or follow social-distancing recommendations.

"To be clear," wrote sociologist Whitney N. Laster Pirtle separately in an article published in *Health Education and Behavior,* "these racial differences in illnesses are not the result of biological or even behavioral differences in race but a result of racist, capitalist systems that structure people's lives."

These systems perpetuate unequal access to health care for everyone in the United States through the privatization of insurance—which may make even basic medical care prohibitively expensive to people who are homeless, unemployed, working part-time, or even working full-time for low wages. They are uniquely damaging, however, to people of color living in low-income neighborhoods, Laster Pirtle wrote. People in lower-income areas often have less green space for exercise and are more likely to be near pollutant-producing manufacturing facilities or in "food deserts" where it can be difficult to obtain affordable, healthy meals, she explained. They also tend to receive lower-quality health care—either because of the unequal distribution of resources or because of providers' racial and economic biases. Combined, these factors also increase individuals' vulnerability to pre-existing conditions such as obesity, diabetes, and heart disease, which can then exacerbate COVID-19's effects on the body.

Race as a Process

While there is a consistent pattern of racial disparities in health in the United States, people don't start out life "Black" or "White," as APS James McKeen Cattell Fellow James S. Jackson (University of Michigan) explained during his 2012 keynote address at the 24th APS Annual Convention. Instead, individuals become racialized over time.



As of September 23, 2020, African Americans accounted for 22% of the 171,012 coronavirus deaths in the United States despite constituting only 12% of the population. By comparison, Whites accounted for 51% of coronavirus deaths despite constituting 60% of the U.S. population. The CDC estimates that the rate of White coronavirus deaths might drop as low as 22% when controlling for age, a significant risk factor for COVID-19, given that the average age for White Americans (58 years) is more than twice that for Black Americans (27 years), Hispanic Americans (11 years), and Asian Americans (29 years).

> Racial health disparities begin to grow in the first year of life, when African American infants are more than twice as likely to die as non-Hispanic White infants.

"The racial group differences that we observe are really only a masquerade," Jackson said. "As [people] traverse the life course and its stressors—environmental, social, psychological, and economic—those groups actually grow apart."

That growing apart begins in the first year of life, during which African American infants are more than twice as likely to die as non-Hispanic White infants. After this initial loss, however, the physical health disparity generally flips, Jackson explained: From 1999 to 2004, for example, African Americans were less likely to die of endocrine, nutritional, and metabolic diseases in childhood or young adulthood than White youths. This may be partly because infant mortality selects for health, meaning that African American babies who survive the first year of life may be healthier, on average, than White babies who had access to better-quality care.

Health outcomes begin to diverge again, though, as people enter middle age and later life, when stressors, along with coping strategies such as smoking, drinking, and unhealthy eating, begin to take their toll. At this point, Jackson explained, African Americans begin to experience worse physical health outcomes, on average, whereas Whites experience worse mental health outcomes, including higher rates of major depression and anxiety.

These differing outcomes, according to Jackson's Environmental Affordances (EA) model, reflect the mounting impact of individuals' social environments, including sources of stress, such as poor-quality housing or experiences of discrimination, and opportunities for stress relief, such as green spaces and liquor stores, which may lead individuals to favor different coping strategies and to respond to those strategies differently.

Jackson and colleagues Katherine M. Knight and Jane A. Rafferty (University of Michigan, Ann Arbor) examined how the EA model interacts with depression in a 2010 article in the *American Journal of Public Health*. Using data from 2,780 participants who responded to surveys in two waves of the Americans Changing Lives study, the researchers found the relationship between stressful life events and the onset of depression to be weaker in Black participants who engaged in more poor health behaviors, such as smoking, drinking, and overeating, than those who did not. White individuals who engaged in many poor health behaviors, on the other hand, exhibited a stronger relationship between stressful life events and depression than those who abstained.

"Over the life course," Jackson and colleagues concluded, "coping strategies that are effective in 'preserving' the mental health of Blacks may work in concert with social, economic, and environmental inequalities to produce physical health disparities in middle age and late life."

These coping behaviors reflect adaptive responses to the maladaptive environments African Americans are more likely to live in, Jackson explained, allowing individuals to blunt their psychological response to chronic stress at the cost of their long-term physical health. White individuals who engage in these behaviors do not, on average, experience the same benefits to mental health, Jackson continued, because their mental health is typically more protected by their environments to begin with.

"This is not a story about race," Jackson stressed. "It is a story about the ways in which privilege is conveyed. . . When you unpack that and you look at people regardless of what their race is, when they have not lived those protected kinds of lives, you indeed get the [same] effects."

During his 2012 keynote address, Jackson used propensity score analysis to demonstrate the connection between privileged environments and health outcomes in order to, in his words, "turn Whites Black." This allowed him to mask participants' self-reported race before computing who was more statistically likely to be Black or White given their life circumstances. As expected, participants who had more in common with the average Black participant, regardless of their actual skin tone, were found to use physically unhealthy behaviors to successfully alleviate psychological stress, which correlated with reduced rates of mental disorders and heightened physical health issues. Similarly, participants who had more in common with the average White participant responded to these behaviors with worsening mental health but had better physical health overall, regardless of their actual race.

"This is a clear instance when, indeed, life context masquerades as a racial group difference," Jackson said.

How Socioeconomic Status—and Stress—Enter the Body

Among the most influential of these life contexts is socioeconomic status (SES), which has been empirically recognized as a primary determinant of health since at least the 1990s, wrote APS James McKeen Cattell Fellow Nancy E. Adler and Alana Conner (University of California, San Francisco) in a 2003 article in *Current Directions in Psychological Science*. In fact, there is evidence that individuals' physical and mental health declines as their SES decreases even in countries with universal health care, suggesting this relationship may

represent a cumulative effect of reduced access to a range of resources including not only health care but education and income, as well as the knowledge, social networks, and higher-quality housing and nutrition that these advantages afford. Individuals with low SES are also likelier to inhabit environments that expose them to more physical and social risks, such as pollution, noise, overcrowding, and crime.

This relationship exists across the SES spectrum, with the wealthy boasting better health than the middle class, who are in turn healthier than those below the poverty line. But the effect is strongest at lower income levels, Adler and Conner continued, influencing everything from rates of infant mortality to cardiovascular disease, schizophrenia, and substance abuse. A study of British civil servants, for example, found that state employees at the highest pay grade had significantly lower mortality than those who worked lower-paying positions even after they retired.

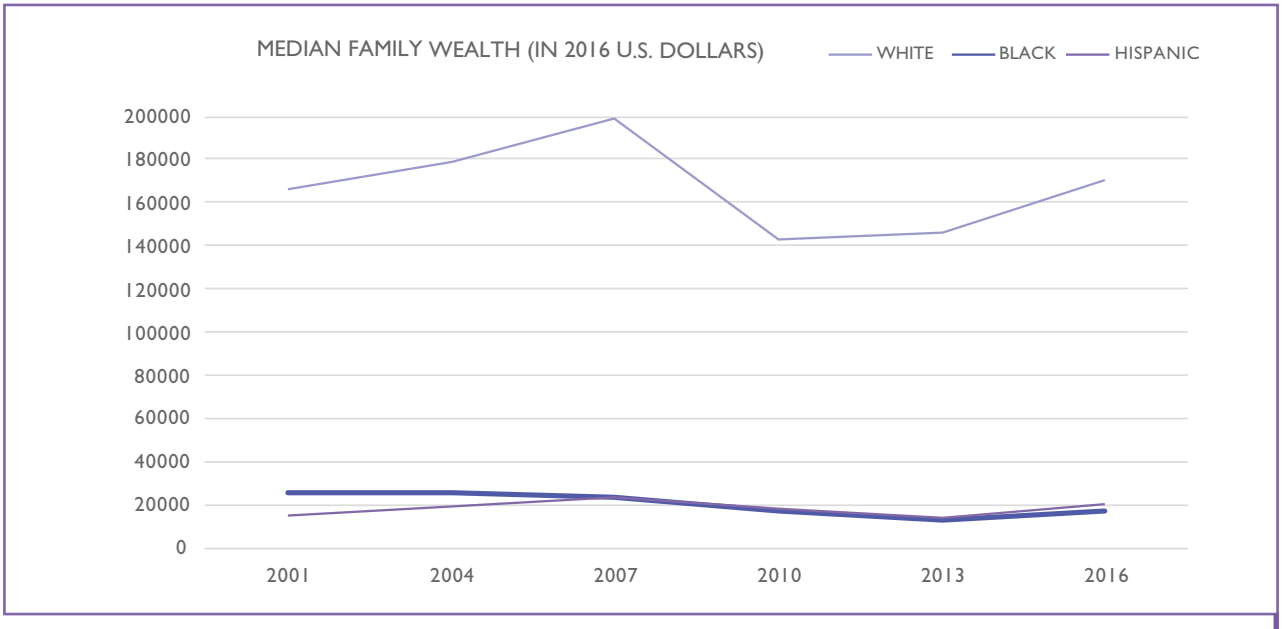
"As SES decreases, individuals are exposed to more demands and have fewer resources with which to address them," Adler and Conner wrote. "Biological responses to [this] stress are functional in that they mobilize energy for a 'fight or flight' response, but the cumulative effects. . . may increase vulnerability to disease."

One mechanism through which SES "gets into the body," Adler explains, is through the dysregulation of multiple physiological systems involved in the stress response over time—a phenomenon known as allostatic load. This "cumulative wear and tear" can increase vulnerability to a range of diseases. Chronic stress can also make individuals more reactive, increasing their sensitivity to stress in the future.

Further, growing up in resource-deprived neighborhoods may increase the prevalence of psychiatric disorders such as depression, anxiety, and attention-deficit/hyperactivity disorder (ADHD) by influencing brain development in areas associated with reward anticipation. In a 2020 study published in *Psychological Science,* Teagan S. Mullins, Ethan M. Campbell, and Jeremy Hogeveen (University of New Mexico) leveraged existing data from 6,396 American children, 51% of whom were White, who participated in the Adolescent Brain Cognitive Development study. As part of that study, the children were presented with the opportunity to win or lose anywhere between 20 cents and $5 per trial by reacting to stimuli under a time limit while undergoing functional MRI.

Through comparing parents' responses on a child-behavior checklist as well as the average SES of families living in their zipcode, Mullins and colleagues found that children from low-SES neighborhoods exhibited reduced activity in areas of the brain associated with reward anticipation, which also correlated with increased parent-reported symptoms of psychopathology.

"Impaired reward-motivated behavior and attention problems can have devastating consequences as children progress through adolescence and adulthood," including increased likelihood of substance abuse and criminal behavior, Mullins and colleagues wrote.



In 2016, the median household wealth of White families in the United States, including all assets and debts, was $171,000, while the median household wealth of Hispanic families was $20,920 and of Black families was just $17,409. This data was calculated by the Urban Institute using the Federal Reserve's Survey of Consumer Finance.

Perceived personal control, particularly in the workplace, also appears to moderate the relationship between SES and health, Adler and Conner explained. They cited a 1998 study by Margie E. Lachman and Suzanne L. Weaver (Brandeis University) in which low-SES people who reported having more control in their personal and professional lives also reported similar rates of depression, chronic health issues, and other health conditions as higher-SES participants.

"Although a substantial portion of the racial-ethnic differences in health is due to social disadvantages associated with low SES, unique effects specific to race-ethnicity also exist, reflecting experiences of discrimination, residential segregation, negative stereotypes, and other circumstances," Adler and Conner noted.

Discrimination and Health Intersect

Experiences of racial discrimination also play a significant role in the health disparities experienced by African Americans and other people of color in the United States. In a 2017 study led by Lee M. Pachter (Nemours Alfred I. DuPont Hospital for Children) and reported in the *Journal of Racial and Ethnic Health Disparities*, Jackson and colleagues found that 90% of 1,170 African American and Afro-Caribbean youths surveyed reported experiencing discrimination. And although Jackson has found rates of depression and anxiety to be lower in Black than White individuals generally, discrimination was also linked to higher annual and lifetime rates of depression and anxiety among Black participants.

> Racial bias specifically has been linked to physical health—in particular, to heart conditions such as hypertension.

The Racial Wealth Gap

As APS Fellows Michael W. Kraus and Jennifer Richeson (Yale University) and colleagues reported in a 2019 issue of *Perspectives on Psychological Science*, Americans vastly underestimate the racial wealth gap in the United States. "The magnitude of these misperceptions is substantial," Richeson and colleagues wrote, "with respondents estimating that for every $100 in wealth held by a White family, a Black family has $90, when, in reality, that Black family has $10."

In 2016, according to the Urban Institute, that difference amounted to a median household wealth, including all assets and debts, of $171,000 for a typical White family and just $17,409 for a typical Black family—a state of massive inequality with serious implications for both physical and mental health.

Racial bias specifically has also been linked to physical health—in particular, to heart conditions such as hypertension—and while researchers must often limit themselves to studying participants' perceptions of racial bias, one 2016 study published in *Psychological Science* illustrated a more direct approach. Using racial-bias data generated by over 1 million White participants between 2003 and 2013 as part of Project Implicit, Jordan B. Leitner (University of California, Berkeley) and his colleagues were able to compare Whites' implicit and explicit racial bias scores with county-level racial disparities in circulatory-disease risk and related deaths.

As part of Project Implicit, led by APS William James Fellow Anthony G. Greenwald (University of Washington) and APS Fellow Brian Nosek (University of Virginia), participants self-reported their feelings of warmth toward European Americans and African Americans, a measure of explicit bias, in addition to completing an Implicit Association Test (IAT). In this case, the IAT required participants to implicitly categorize Black and White faces as either "good" or "bad." A participant who responded faster when White was paired with "good" and Black was paired with "bad" than when the categories were reversed (Black with "good" and White with "bad") might be said to hold anti-Black implicit bias. Project Implicit also collected participants' IP addresses, which allowed Leitner and colleagues to compare individuals' locations with CDC data collected from over 23,000 Black respondents in 208 counties and 175,000 White respondents in 210 counties in 2012.

In areas where White respondents reported higher levels of explicit racial bias, Black participants were 8% less likely than Whites to report access to affordable health care, compared to 3% less likely in areas with lower explicit bias. Black individuals were also significantly more likely than White individuals to die of circulatory disease in counties with higher explicit bias. In both cases, implicit bias was not found to relate to African Americans' cardiovascular health.

Racial bias might interact with disease risk and access to care through multiple pathways, including structural discrimination in the health care system and increased stress from interpersonal hostility, which has been shown to increase the risk of circulatory disease over time, explained Leitner and colleagues.

A similar relationship may exist between dominant-group attitudes and health in other minority groups, the researchers noted. People in the lesbian, gay, bisexual, and transgender (LGBT) community, for example, have been found to have shorter life expectancies in areas with higher levels of antigay attitudes.

Because of the way identities intersect, wrote Tené T. Lewis and Miriam E. Van Dyke (Emory University) in a 2018 article in *Current Directions in Psychological Science*, this kind of stress may compound in unique ways for people who experience discrimination not only because of their race but because of other aspects of their identity, such as their age, gender, sexual orientation, or SES.

While SES has been linked to reduced physical and mental health outcomes across racial groups, for example, African Americans with higher SES often report experiencing more discrimination than those in lower-income settings. This may be because higher-SES African Americans are likelier to live and work in more racially integrated communities, exposing them to more discrimination from people of other races, which may also prevent them from receiving the full health benefits of higher SES, Lewis and Van Dyke explained.

"In this respect, designing studies that acknowledge some of the complexity within races might ultimately lead to a better understanding of factors that shape disparities between races," Lewis and Van Dyke wrote.

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CALL FOR APPLICATIONS

James McKeen Cattell Fund Fellowship

Presented in partnership with

ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

Application deadline: January 15, 2021

Questions?

Christina L. Williams

williams@psych.duke.edu

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aps
ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

For over half a century, the James McKeen Cattell Fund has provided support for the science and application of psychology. The Fund provides Fellowships to supplement faculty's regular sabbatical allowance provided by their home institution to allow for an extension of leave time from one to two semesters. Awards provide up to half of the recipient's salary for the academic year, with a ceiling of $40,000.

Eligibility requirements:

- Available to researchers in the broad field of psychological science who are tenured faculty members at colleges and universities in the US and Canada who are eligible, according to the regulations of their own institutions, for a sabbatical leave or its equivalent. Formal tenure confirmation must be in hand by February 1st of the application year.
- Applicants must not have had a leave with pay for the 5 years preceding the requested sabbatical (medical or parental leave are considered exceptions), including the entire 2020-2021 academic year. Sabbatical requests must be for the Academic Year 2021-2022.
- Prior recipients are not eligible

Applications may be submitted online: www.cattell.duke.edu

CATTELL FUND PROJECTS EXPLORE PRENATAL MATERNAL DISTRESS, HIGH-STAKES DECISION-MAKING, NEUROSCIENCE OF READING

The 2020–2021 James McKeen Cattell Fund Fellowships have been awarded to Elisabeth Conradt, Ian Krajbich, and Nicole Landi. Presented in partnership with APS, the fellowships allow recipients to extend their sabbatical periods from one semester to a full year. During that time, the researchers plan to pursue the research projects outlined below.

Elisabeth Conradt

University of Utah
psych.utah.edu/people/faculty/conradt-elisabeth.php

A major barrier to progress in the field of prenatal programming is that the vast majority of research is observational, and no claims of causality can be inferred. An ethical method of partially overcoming this limitation is to conduct intervention research to reduce prenatal maternal distress (Poggi Davis, Hankin, Swales, & Hoffman, 2018). When pregnant women experience improvements in mood, the health of two generations can be affected: mother and infant. We can also test causal assumptions about the influence of prenatal maternal psychological distress on newborn neurodevelopment. During this sabbatical year, my colleagues and I are developing a series of studies to (1) use computational approaches to identify families at risk for mood disorders from a database of over 11 million families in Utah, (2) use virtual data collection methods piloted during this pandemic to deeply phenotype a subset of families, and (3) intervene during pregnancy to determine whether alleviating maternal distress is related to improvements in newborn neurobehavior.

A second barrier hampering progress for the prenatal programming field is the lack of consideration for how prenatal exposure to racism and racial discrimination can become biologically embedded in the pregnant woman and her fetus (Chaney, Lopez, Wiley, Meyer, & Valeggia, 2019). This year, my colleagues Sierra Carter, Sheila Crowell, and I are using novel methods of collecting fetal and maternal heart rate and heart rate variability to uncover how everyday discrimination can affect the health of mother and fetus. This study could reveal how prenatal exposure to racial discrimination is related to preterm birth and birth complications for mother and baby. We will also have a better understanding of whether multiple forms of racism-related stress get under the maternal and fetal skin to increase risk for preterm birth and low birth weight.

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Ian Krajbich

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Decision-making is not instantaneous. Instead, decisions emerge over time as information is collected, evaluated, and compared. To gain better insight into the choice processes involved in decision-making, my work uses choice-process data such as eye tracking, mouse tracking, neuroimaging, and response times to develop and test dynamic computational models of behavior. In particular, my research builds on the idea that many decisions are made via an attention-guided sequential-sampling model (SSM) process, akin to a mental tug-of-war. Gaze amplifies value in the decision process (Smith & Krajbich, 2019), while mouse trajectories and response times reflect the strength of preference/belief (Konovalov & Krajbich, 2019). A related topic we are working on is how well people understand these patterns and use them to extract information from each other (Frydman & Krajbich, 2019; Konovalov & Krajbich, 2020).

Despite the predominance of SSMs in neuroeconomics and decision neuroscience, they have yet to see widespread use in research on judgment and decision-making or behavioral economics. The aim of my sabbatical is to expand the ➡

scope of these models to complex, multi-attribute, high-stakes decisions in an effort to bridge that gap. To this end, the bulk of my sabbatical will be spent in collaboration with researchers in marketing and finance.

My sabbatical year will be divided between the University of California, Berkeley Haas School of Business and the University of Melbourne. With collaborators at Haas, I will study stereotypes (Jenkins et al., 2018), multi-attribute ("conjoint") consumer decisions, and decision from memory. With collaborators in Melbourne at the Brain, Mind, and Markets Laboratory, I aim to expand my lab's research to financial markets. A focus of this research is on the complexity of decisions: how to model it, how people handle it, and its impact on markets.

I am extremely grateful to the James McKeen Cattell Fund for allowing me to pursue these new directions in my research program.

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My lab examines the neurobiological basis of reading and other skills that support reading (e.g., language). For example, we use neuroimaging techniques such as MRI and EEG to better understand the etiology of individual differences in reading (Perdue et al., 2020; Ryherd et al., 2018), and we look at how genetic variation influences brain development and reading performance (e.g., Landi et al., 2013; Mascheretti et al., 2020; Perdue et al., 2018).

Over the past decade, neuroscience techniques have become common in educational research, including studies of reading and reading disability. This merging of fields has helped to elucidate the brain basis of reading disability and, more recently, of reading intervention response; however, there is often limited translation of this knowledge to the broader scientific and educational communities (see Landi et al., 2019). While work in this area has been successful in identifying neurobiological correlates of intervention outcomes at the group level (e.g., responders and nonresponders), it is not yet possible to use this information to inform at the individual student level. Moreover, this work is primarily lab-based and typically siloed from classroom practices, which limits ecological validity and translational potential.

With increasing awareness of the neurobiological origins of reading disabilities and gaining popularity of putative "brain-based" instructional approaches in clinics and classrooms, it is imperative that we create more bidirectional communication between scientists and practitioners. My sabbatical research will build upon recently established collaborative partnerships with specialized schools for children with reading disabilities that include in-school cognitive neuroscience laboratories. This work will afford frequent and ecologically valid neurobiological assessment as children's reading improves in response to remedial reading instruction.

Additionally, I will work directly with teachers to characterize and codify effective instructional practices. The aims of this work are to identify predictors of intervention response that are sensitive and reliable at the student level and establish bidirectional researcher-practitioner partnerships, with the longer-term goal of creating more individualized methods for intervening in the classroom.

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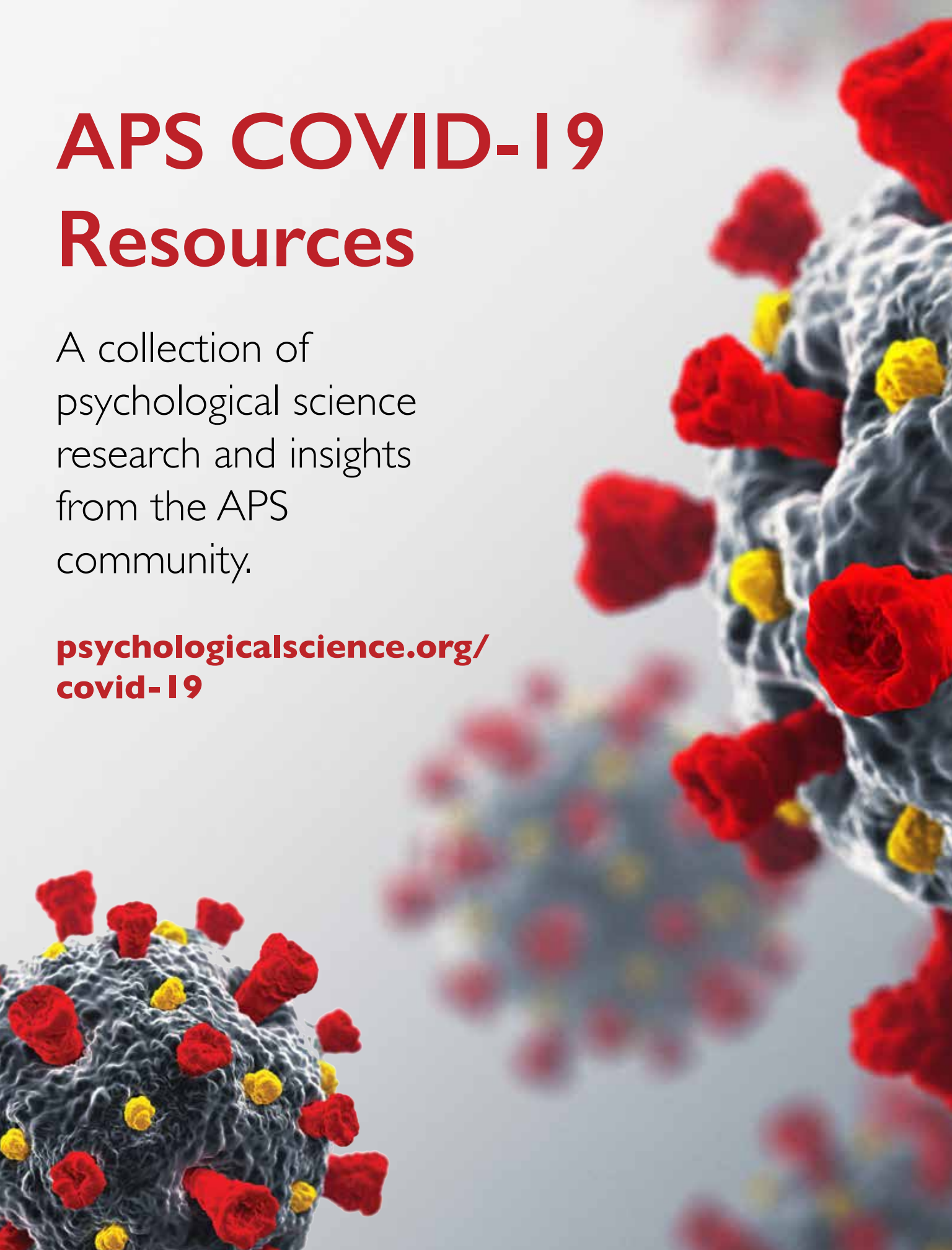
APS COVID-19 Resources

A collection of psychological science research and insights from the APS community.

psychologicalscience.org/covid-19



NITOP: PROMOTING TEACHING THAT MATTERS (EVEN IN A PANDEMIC)

By Stephen L. Chew

The emergency pivot to remote learning this spring due to the COVID-19 pandemic forced everyone to reconsider how they teach and what their goals were as teachers. There was the scramble to master new technologies, as well as the need for those of us who had never taught online to reimagine the structure of our courses to provide rich, accessible learning experiences for students. We also had to grapple with new problems, both procedural (How can I make sure students are paying attention? How can I prevent cheating in online tests?) and humanitarian (How can I work with students whose lives are disrupted by illness and death, financial uncertainty, family instability, and lack of access to technology?). Academic conferences, our usual outlets for professional development and comparing notes with colleagues, were cancelled or moved online, including the conference that I run, the National Institute on the Teaching of Psychology (NITOP).

NITOP is the oldest and largest conference dedicated to the teaching of psychology. In its 43-year history, we've developed a format that offers our attendees support and professional development. Every year, we curate a set of 16 invited speakers to address both enduring and emerging issues in teaching. We have traditional poster sessions on pedagogical research and innovation, but we also have the Teaching Slam, a set of rapid-fire presentations on new approaches to teaching, and Demo Demo, where participants become students as the presenter carries out an innovative teaching activity. COVID-19 forced us to reconsider how best to serve teachers of psychology in these unusual times. We cancelled our in-person conference, but instead of simply moving it online, we set out to create a virtual conference optimized to address the issues teachers are facing right now. Because time is in such short supply for teachers, we decided to condense NITOP 2021 into one afternoon of synchronous activities on January 4, 2021, from 2:00 to 6:00 p.m. Eastern Standard Time on Zoom.

NITOP 2021 will be held online on January 4, 2021. Registration is full. NITOP 2022 is scheduled for January 3–6, 2022, in St. Pete Beach, Florida. APS is a Platinum Sponsor; registration will be discounted for APS members. Stay tuned to nitop.org *for registration details.*

Speakers from NITOP 2020, held last January in Florida, include several APS Fellows as well as Stephen Chew, conference chair (back row, third from right).

High-Impact Professional Development

Although relatively brief, NITOP 2021 (nitop.org) will provide high-impact professional development. NITOP has always curated its speakers and presenters to create a comprehensive program that features both established leaders as well as new voices in the teaching of psychology. We are keeping to that practice with two keynote speakers and six Teaching Slam presentations. In our first keynote, David Myers (Hope College) will speak on "Life in the Time of COVID: Psychology's Insights and Tips." Our second speaker is Apryl Alexander (University of Denver), who will speak on "Using Psychology for the Public Good: Social Justice and Advocacy." The presentations will leave ample time for questions. The Teaching Slam will consist of six brief presentations, each describing an idea or activity that teachers can incorporate directly into

Stephen L. Chew has been a professor of psychology at Samford University in Birmingham, Alabama, since 1993. He serves as only the fourth chair of NITOP in its 43-year history.

APS members will receive discounted registration to NITOP 2022. View recorded lectures for the 2021 conference on the NITOP YouTube channel: bit.ly/32homwJ .

their teaching. Normally we select presenters from submissions, but this year we are inviting back some of our most popular speakers from past NITOP conferences to give their best tips for teaching during the pandemic.

NITOP 2021 will also have an asynchronous portion. We have asked some of our best past speakers to record mini-lectures that faculty can easily incorporate into their online courses, saving class-preparation time by providing them with high-quality presentations on topics recorded by subject experts. These mini-lectures will cover a wide array of topics. For instance, I've already recorded a presentation on "Learning During Pandemic Times," addressing the obstacles and pitfalls that students face when trying to study—challenging under the best of conditions, and all the more so during a pandemic. In another presentation, Beth Morling (University of Delaware) will explain some key points in research methods. The lectures will be posted to the NITOP YouTube channel (bit.ly/32homwJ) as they are recorded.

Finally, we have not forgotten that one of the most beneficial aspects of any conference is the opportunity for attendees to socialize and share ideas with like-minded colleagues. Too often, teachers work in isolation and rarely have a chance to discuss issues with other teachers. NITOP tries to provide the time, space, and opportunities, both formal and informal, for teachers to talk and help each other. We will end the day with "breakout rooms" that will allow attendees to discuss the day's presentations or current challenges in teaching, much like the Participant Idea Exchanges we host in our regular conference. We have also planned fun social activities for stress relief, such as our annual Nearly Impossible Trivia of Psychology contest.

NITOP 2021 will be free, with registration required for the synchronous program. Registration is full, but presentations will be publicly available on the NITOP website after the event, with the permission of presenters.

Teaching's Critical Impact

NITOP is dedicated to the idea that nothing is more important for the future of psychological science than improving the teaching of psychology. Although the profession needs to attract a steady stream of talented students for graduate study, most of our students will not go on to graduate school in psychology. These, however, are the people we most need to convince of the value of psychological science and the need to support psychological research. Introductory psychology is among the most popular college courses in terms of enrollment, and it provides the best opportunity for shaping accurate beliefs and perceptions, assuming it is taught well. Introductory psychology can teach students valuable skills and knowledge that are applicable beyond college. For instance, consider the amount of suffering and death that could have been prevented during this pandemic if more people understood the difference between good science (well-designed studies with valid conclusions), bad science (poorly designed studies with invalid conclusions), and pseudoscience (beliefs mistakenly thought to have a scientific basis). Imagine if more people were aware of the dangers of biases in thinking, and if they knew how to detect misinformation.

The question NITOP has grappled with during its entire history is, "How do we improve the teaching of psychology?" The pandemic has revealed that this simple question defies a simple answer. Our students come to our classes with different levels of motivation, different amounts of prior understanding (and misconceptions), different personal challenges, and different learning resources available to them. This has always been the case; the pandemic has only made it more obvious. Our job as teachers is to develop a generative and transformative understanding of psychology in as many of our students as possible, despite the many challenges. That is why effective teaching is a complex skill that takes years to develop.

For many psychologists, most if not all of their "training" in how to teach comes from having to figure it out once they are assigned to teach a course. Even graduate students fortunate enough to receive formal training may find teaching full-time to be an overwhelming experience. NITOP exists to provide professional development in teaching for aspiring as well as veteran teachers of psychology. We strive to provide our attendees with a myriad of teaching ideas and innovations they may not have been aware of before.

We are proud that APS has been a longtime partner with NITOP. APS has long understood the connection between the teaching of psychology and the future of psychological science. Many of our speakers are APS members. When they speak at NITOP, their focus is on what teachers should understand about their research to help inform teaching. For speakers, it is a rare opportunity to disseminate their ideas and research through an international network of psychology teachers.

We hope to be back to our traditional face-to face format by January 2022. We want to be back at our usual conference location in St. Pete Beach, Florida, but we will remain flexible, just as teachers need to be, in the face of pandemic uncertainty.

NEW *CLINICAL PSYCHOLOGICAL SCIENCE* EDITOR VOWS TO REFLECT "INCREDIBLY DIVERSE FIELD"

In January, APS Fellow Jennifer Tackett will begin her tenure as editor of *Clinical Psychological Science*. A professor and director of clinical training at Northwestern University, she also leads the Personality Across Development lab, which investigates how the personalities of children and adolescents relate to behaviors and outcomes. APS Publications Director Amy Drew recently asked Tackett a few questions about her plans for the journal.

What topics are you most interested in seeing represented in the pages of *Clinical Psychological Science*? What would you like to see more of?

The unique nature of *CPS* is the foundation of my interest and enthusiasm in accepting this new position. If psychological science is a "hub science," clinical psychological science is and should be the hub of the hub. Indeed, the core mission of *CPS* is to occupy that central space—within and outside of psychology, broadly—and to provide a home for truly intersectional and interdisciplinary discoveries across psychological science, all finding their intersection in the pages of *CPS*. Clinical psychological science bridges application and theory, integrates multiple subdomains within psychological science (cognitive, personality, neuroscience, social, community, developmental, psychometrics, and beyond), and integrates with many disciplines outside of psychology. Yet, I also think more can be done to fully realize this mission. Under my editorship, I hope to bring this core focus of *CPS* to the forefront, concentrating on broad, consilient, methodologically rigorous, and provocative work that showcases clinical psychological science as *the* hub discipline in psychology—an outlet for work that has no other home in the field, establishing the unique identity of *CPS* within the world of clinical psychology, but also within the world of psychological science, broadly conceived. Science is increasingly multidisciplinary and collaborative,

an evolution which I fully embrace. Innovation happens at the intersections of otherwise disconnected spaces. *CPS* should be the outlet where this innovation is happening.

How will your interdisciplinary background and approach help you achieve your goal of expanding *CPS*'s core mission of serving as a uniquely integrative outlet for work that connects and cuts across disciplines?

This cross-cutting and integrative perspective parallels my own eclectic training (PhD in clinical psychology with minors in statistics, behavior genetics, and personality) and my identity as a multi-faceted psychological scientist with connections across the field, including areas of clinical, personality, statistics and methods, development, behavior genetics, assessment, social, educational, and industrial-organizational psychology. These connections across many areas position me well to maintain and expand the broad, intersectional, cross-cutting core of a journal like *CPS*, with a strong home base in clinical science; I will leverage my existing network and actively reach out to areas outside my expertise to maximize the reach of CPS. I regularly and increasingly engage in large-scale collaborative efforts with researchers across different psychological subdisciplines, and outside of psychology, as well. I believe fully in the scope and mission of the journal, and truly believe that my own interdisciplinary background and approach can be leveraged to make a real impact on the field through this specific outlet. The integrative and wide-ranging expertise of the associate editorial team reflects this goal, as well.

In assembling your editorial board, what steps have you taken to ensure diverse representation across demographic and geographic categories, content domains, and methodologies, as well as among underrepresented or marginalized groups? Why is this diverse representation important for the journal?

Science is increasingly multidisciplinary and collaborative, an evolution which I fully embrace. Innovation happens at the intersections of otherwise disconnected spaces. *CPS* should be the outlet where this innovation is happening.

Commitment to diversity and representativeness are core values in my work as a psychological scientist, and I integrate these values explicitly into my work as an adviser, a teacher, and the director of our clinical psychology training program at Northwestern University, in the expansion of my own research program to recruit more diverse samples and explore relevant empirical questions; and in my service to the field more broadly. My editorial work will be no exception. Specifically, in assembling my associate editorial team I aimed to incorporate diversity across many domains, including demographic, geographic, cultural, and intellectual diversity. The associate editors reflect expertise that is wide-ranging across psychopathological constructs, methodological approaches, and specific populations (e.g., child vs adult).

Clinical psychology is an incredibly diverse field, but this diversity has been remarkably absent in the editorial teams leading our top outlets. This results in a highly restricted pipeline influencing which papers are ultimately published and subsequently shape the field in consequential ways. It is long overdue for our top outlets to better reflect the wide diversity existing in the field itself, which will in turn result in greater diversity and intellectual expansion in the papers appearing in our journals. These goals were top of mind as I invited associate editors who will lead the journal over the coming years, and all of us will be similarly prioritizing these goals as we jointly create the broader team of consulting editors and ad hoc reviewers.

A final point is that clinical psychology, like other areas in psychology, has been long dominated by very senior scholars, often clustering at elite institutions. This, too, results in a stifled and biased academic pipeline, missing the amazing scientific contributions to the publication process that we might find with broader institutional participation and the explicit prioritization of younger scholars. These were additional considerations as I contemplated the associate editor team, and the associate editors and I will be attending to this once again when assembling the consulting editorial board.

Considering this task in its entirety, it is intimidating in its breadth and depth, and clinical psychology has failed on many fronts. I hope that the next phase of *CPS* begins the long process of opening up our science to many new voices.

What are some things authors should keep in mind when considering whether to submit their articles to *CPS*? Are there particular questions or issues their papers should address to increase their chances of having their article accepted?

In our review and evaluation of manuscripts, the associate editors and I will be attending to the priority areas at the core of the vision for the next phase of the journal. These three priority areas are (1) scientific interdisciplinarity ➡

> It is long overdue for our top outlets to better reflect the wide diversity existing in the field itself, which will in turn result in greater diversity and intellectual expansion in the papers appearing in our journals.

and innovative collaboration, (2) diversity and representation, and (3) best practices regarding scientific openness and transparency. The associate editors and I will view submissions tackling one or more of these priority areas as particularly relevant to the core mission of the journal, and we hope to see many strong submissions from authors that incorporate these priorities.

What do you see as the role of *Clinical Psychological Science* in open science and reproducibility efforts?

I have been an active participant in the open science and reproducibility efforts in psychological science, primarily from the perspective of clinical psychological science. Through these experiences, I have highlighted the need to balance multiple viewpoints—including those already immersed in reform efforts and those potentially unaware or even opposed to them, as well as the many diverse research topics and methodologies employed across the range of psychological science. Much of my own writing on these topics has been from the perspective of integrating open science and replication topics with the broader clinical psychological community, which has been largely uninvolved to date.

As I have written in a number of articles on this topic and otherwise demonstrated in my various open-science activities, I believe there are many relevant practices and issues that need much more focused attention and consideration—too many to fully delineate here. Although clinical psychological science has lagged behind other areas of psychology in this movement, *CPS* has nonetheless been at the forefront of institutional change in this regard. I hope to build on the foundation that Scott Lilienfeld has built and bring a fresh perspective to advancing these issues at *CPS*, alongside my associate and consulting editor teams.

Clinical Psychological Science Editorial Board

In October, after this interview was completed, Jennifer Tackett announced the associate editorial team for the journal. "I am BEYOND thrilled to introduce you to the amazing folks who will be joining me in bringing in the next phase of *CPS* in January 2021," she tweeted.

- Katja Beesdo-Baum, *Technische Universität Dresden*
- Pim Cuijpers, *Vrije Universiteit Amsterdam*
- Vina Goghari, *University of Toronto*
- DeMond Grant, *Oklahoma State University*
- Kelsie Forbush, *University of Kansas*
- Steve Lee, *University of California, Los Angeles*
- Aidan Wright, *University of Pittsburgh*
- Tamika Zapolski, *Indiana University Purdue University, Indianapolis*

Learn more about *Clinical Psychological Science* at psychologicalscience.org/publications/clinical.

It's Time

Renew Your Commitment to Psychological Science with Your APS Membership

Your APS membership supports a collective effort to advance psychological science across all areas. We promote scientific exchange, increase public understanding of our field, and foster innovation in research methodology and practice. Together, we can transform society for the better. Here are a few ways we do that:

- **Share your science** with the public to promote broader understanding;
- **Keep you informed** on matters affecting psychological science;
- **Cultivate community** and foster global connections among our members;
- **Advocate for** increased support of psychological science in public policy;
- **Support your career** with resources, learning opportunities and funding; and
- **Support student scientists** in their professional development.

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PSYCORONA: A WORLD OF REACTIONS TO COVID-19

How an online data visualization tool reports data from an international psychological survey

By Jannis Kreienkamp, Maximilian Agostini, and N. Pontus Leander, on behalf of the PsyCorona Collaboration (see page 45 for members)

The COVID-19 pandemic and corresponding lockdowns have prompted one of the greatest mass disruptions to civil life in modern history. The potential psychological consequences of facing a virus without a vaccine are vast; some may be immediately evident, while others may manifest over time. The psychological impact of the pandemic may also vary across culture and context. Although psychological research and theories could help to explain responses to COVID-19 (Bélanger, 2020; Van Bavel et al., 2020), the last global virus event of this magnitude—the 1918 flu pandemic—occurred when empirical psychology was still at an early stage. As COVID-19 began its spread, it became clear that psychological science might benefit from a globally oriented study that could offer some insight into which reactions were universal and which were unique to certain regions and cultures.

Jannis Kreienkamp and **Maximilian Agostini** are PhD students in the Department of Psychology, University of Groningen; they are cofounders of PsyCorona and designed the data visualization tool. Pontus Leander, PhD, is an associate professor of psychology, University of Groningen, and co-principal investigator of PsyCorona (psycorona.org).

In March 2020, a collaboration of over 100 researchers pooled available resources to launch a rapid international survey with the goal of creating a historical record of certain psychological and behavioral responses to the pandemic. The ongoing study incorporates cross-cultural, longitudinal, and integrative data science methods to maximize the scientific value and re-use potential of the data. In addition to assessing regional demographics, psychological data, and metadata, the survey assesses key behaviors such as frequency of leaving the home and tendencies toward physical distancing. Further information about this research is provided on the project website (psycorona.org) and in a PsyCorona preview article in the September 2020 *Observer* (psychologicalscience.org/observer/covid-19-psycorona-global-psychological-response).

Approximately 60,000 respondents completed the initial survey, which was available in 30 languages. Given early indications that age and gender were likely vulnerability factors (Centers for Disease Control and Prevention, 2020; Wenham et al., 2020), the sample included 20 national subsamples representative of population age/gender distributions. After completing the survey, respondents could sign up to be contacted for follow-up surveys that would continue through the initial lockdowns and into an anticipated second wave of the virus in the fall or winter. The longitudinal research will continue through 2020.

The User Experience

To develop this interactive Web application, the members of the PsyCorona Collaboration focused on a set of principles and characteristics to ensure a good user experience.

- Trust and transparency: The sections "The Sample" and "Data" aim to offer transparency about our sample as well as our data protection, preparation, and sharing. We provide full question wording where possible and provide explanations in a manner that is accessible to researchers, practitioners, and participants alike.
- Clarity and robustness: To ensure the validity of the conclusions drawn from the data and to safeguard against sample artifacts, users can conduct some basic checks. One bias might be introduced by the sampling method and survey dissemination. To safeguard against sampling biases, users can toggle between viewing the full sample or only the age/gender-representative samples. Another bias might arise from differences between countries in how people respond to survey questions (e.g., Gelfand et al., 2002). One conservative method to adjust for potential cultural response biases is to assess within-person standardized scores. The "Transformation" button converts the data to such scores.
- User autonomy: We aim to facilitate interactive exploration. We created a curated selection of variables and anonymized the data set, but we have not curated the output or how it is interpreted. Whereas traditional scientific publications tend to focus on specific patterns in the data, users are free to examine their patterns of interest and interpret the output independent of the views of the developers. Users may pursue a targeted question-answer approach (i.e., the three-step approach offered above) or engage in free exploration and trial-and-error approaches.

The PsyCorona Data Visualization Tool

Alongside PsyCorona's scientific mission is its crisis-oriented mission to provide fast and openly accessible information relevant to the present pandemic. Given that the academic publication process can be slow, we sought to provide a more immediate way to access portions of the data. In close collaboration with the University of Groningen's Center for Information and Technology, we built a secure, anonymous, Web-based data visualization tool that lets users easily examine key variables. Although members of the PsyCorona collaboration are also developing scientific articles for peer review, users are welcome to interact directly with the tool's country-level data.

The purpose of this data visualization tool is twofold. First, it serves as a resource for researchers, analysts, and practitioners to understand people's thoughts, feelings, and responses to the coronavirus as well as the extraordinary societal measures taken against it. Such knowledge could provide pilot data for researchers, inform current policies to contain the pandemic, or help society prepare for similar events in the future. Second, it serves as a test case for how psychological scientists can use data visualization to engage the public and share results with respondents. Tens of thousands of respondents invested time and effort to share their experiences, and the app affords them access and agency over the data (Tuck, 2009) as well as an interactive experience of how data can be used (e.g., Van der Krieke et al., 2016).

An up-to-date version of the tool can be accessed via our project website (psycorona.org/data). Three information sections ("About," "Data," and "Take

the Survey Now") generally describe what PsyCorona is all about, where the data come from, and how to access the survey. There are also three data presentation sections ("The Sample," "Psychological Variables," and "Development"), which aim to facilitate a three-step approach: evaluation, examination/exploration, and validation.

1. Evaluation: The sections "The Sample" and "Psychological Variables" let users first check whether the data are relevant to their interests and questions.

2. Examination/exploration: The "Psychological Variables" and "Development" sections let users visualize psychological trends. Here are some examples:

- Country averages (e.g., *"In the United States, how many days per week did people have in-person contact with others outside the home?"*, *"Were people more anxious in Italy or Spain?"*)
- Basic relationships between variables (e.g., *"Did Saudi Arabia's relatively strict community rules correspond with more physical distancing?"*, *"Did countries with more community organization also have a higher sense of efficacy to mitigate the virus?"*)
- Differences over time (e.g., *"Did respondents in Brazil report an increase or a decline of trust in the government to fight COVID-19?"*, *"Did feelings of depression develop differently between certain Eastern and Western societies?"*)

3. Validation: Users can customize the aspects of the sample they wish to view and whether to adjust for certain cross-cultural biases in survey responses. The "Sample Selection" lets users switch between viewing either the full sample or only the 20 national subsamples with representative age/gender distributions. The "Transformation" button allows users to control for national response styles—cultural tendencies to give higher or lower scores across all Likert-type scales in the survey (Gelfand et al., 2002).

A Brief User's Guide

Users can examine different aspects of the data via three main sections: "The Sample," "Psychological Variables," and "Development." "The Sample" provides information on gender, age, education, political orientation, and preferred language. Sample sizes also varied by country and region, so this panel lets users determine whether their countries and/or demographic groups of interest are adequately represented in the data (Figure 1).

"Psychological Variables" gives access to a curated selection of different psychological variables, separated by country. This selection includes virus-relevant beliefs and attitudes, emotions and affect, attitudes toward the government and society, and self-reported behaviors relevant to the pandemic. For each variable, we provide country-level information on the central tendency (i.e., mean) and, where possible, measures of uncertainty around that value (e.g., a confidence interval). Users can examine and compare different psychological variables within one country, across multiple countries, or as global averages (e.g., *"Did people in the United States, on average, have stronger positive or negative emotions than people in the Netherlands?"*; Figure 2).

Further within the "Psychological Variables" section, users can find "Cross-Domain Relationships." This subsection lets users plot two psychological variables

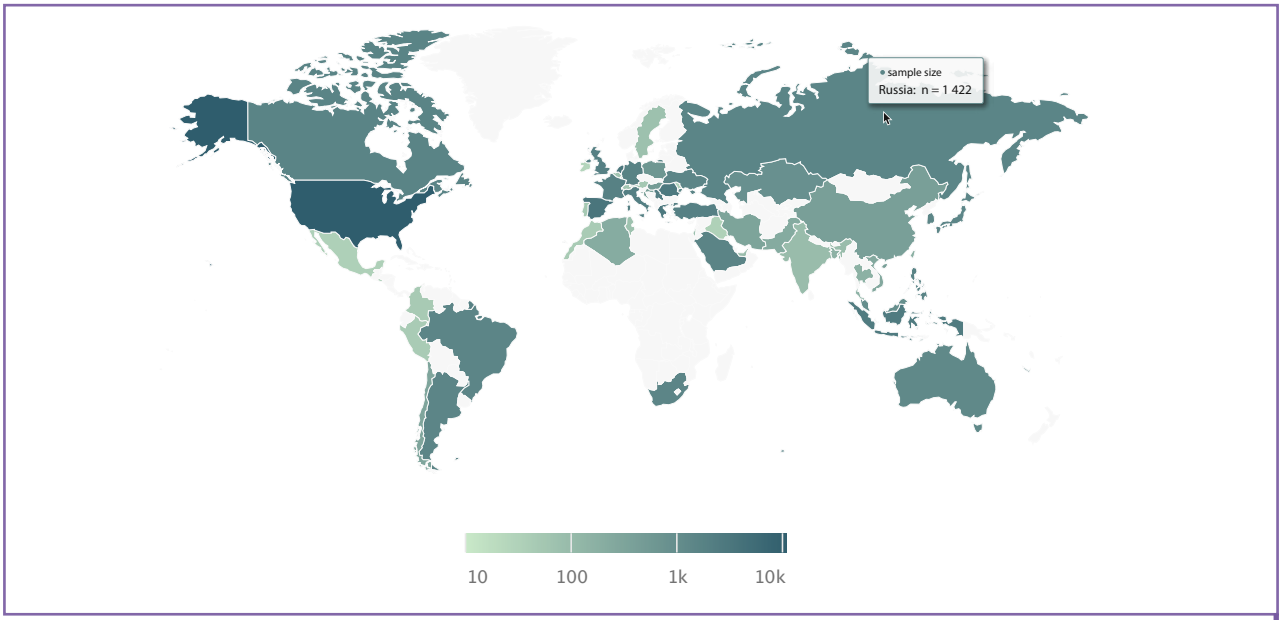

Figure 1. World map of countries sampled in spring 2020. Users of the online tool can see each country's sample size by hovering their mouse over the map.

Figure 2. Emotion web comparing average responses in the United States (green) versus the Netherlands (red).

against each other to visualize their relationship. Users can thus isolate unique, country-specific effects or notice global patterns, which in turn sets the basis for further inquiry. For example, Figure 3 illustrates a country-specific effect in which respondents in Japan report having relatively weak community rules around virus containment yet still maintain high hopes that the coronavirus situation will improve. Figure 4 illustrates an example of a global trend—one might wonder why, in countries where people report receiving clearer information from the government about the virus, they also report that their communities punish those who deviate from rules more. These patterns can form the basis for new insights and more targeted questions. Note that, to protect the privacy of our participants, the functionality of this subsection remains quite basic, but it may nevertheless help to initiate or support pandemic-related research—and identify important knowledge gaps.

Finally, the "Development" section allows users to look at country responses at different points in time. This allows for questions about a single variable (e.g., *"Did trust in the Turkish government to fight COVID-19 remain consistent across points in time, or is the pattern more complex?"*), along with questions about variable co-developments within a country or region (e.g., *"In Indonesia, was the frequency of in-person social contacts preceded or followed by changes in hope that the COVID-19 situation would improve?"*). Users can also see whether different countries showed different developments over time (e.g., *"Did conspiracy beliefs develop similarly in the United Kingdom and the United States?"*).

Altogether, this data visualization tool offers a glimpse into how people, across cultures and contexts, have reacted and responded to the COVID-19 pandemic as it has impacted them. It is meant to serve as a resource for researchers and practitioners to refine their work or to identify potential target points for intervention. It also serves to promote public engagement, with an eye toward communicating data in a way that affords personal agency. However, we caution users to bear in mind the uncertainty surrounding these data: As with all psychological research, the samples and measures can have important limitations, and any preliminary findings from this tool should be robustly investigated before firm conclusions are drawn.

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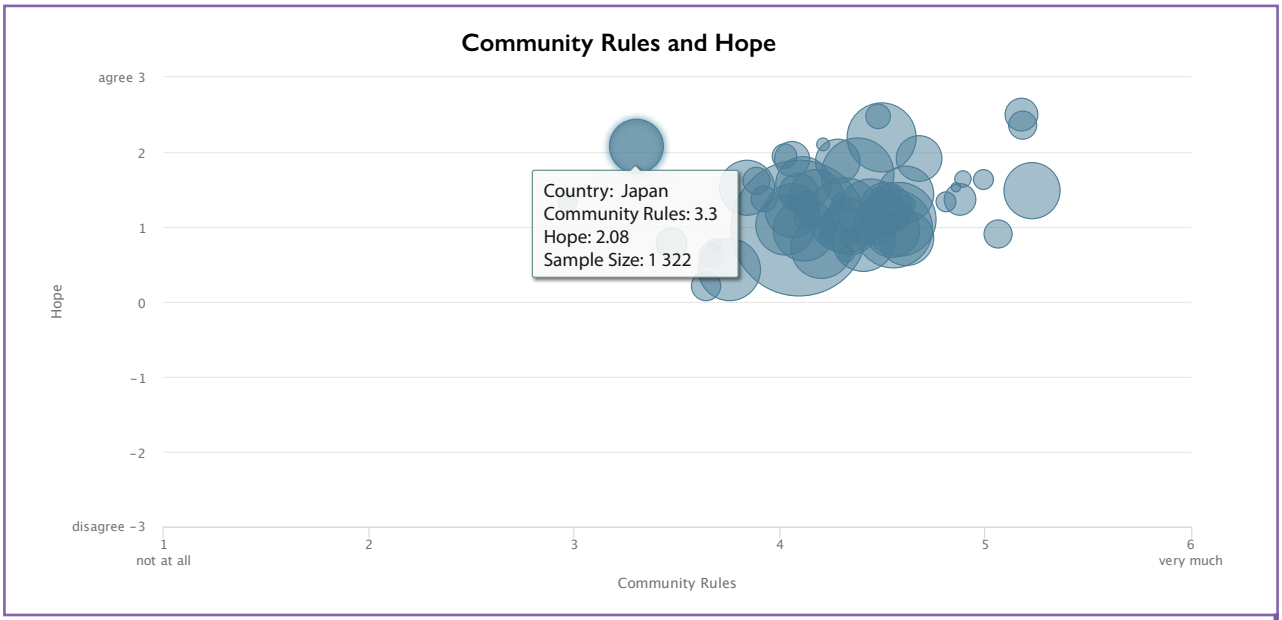

Figure 3. Perceptions that one's community has strong community rules surrounding the coronavirus (x-axis) and the extent to which one had high hopes that the coronavirus situation would soon improve (y-axis).

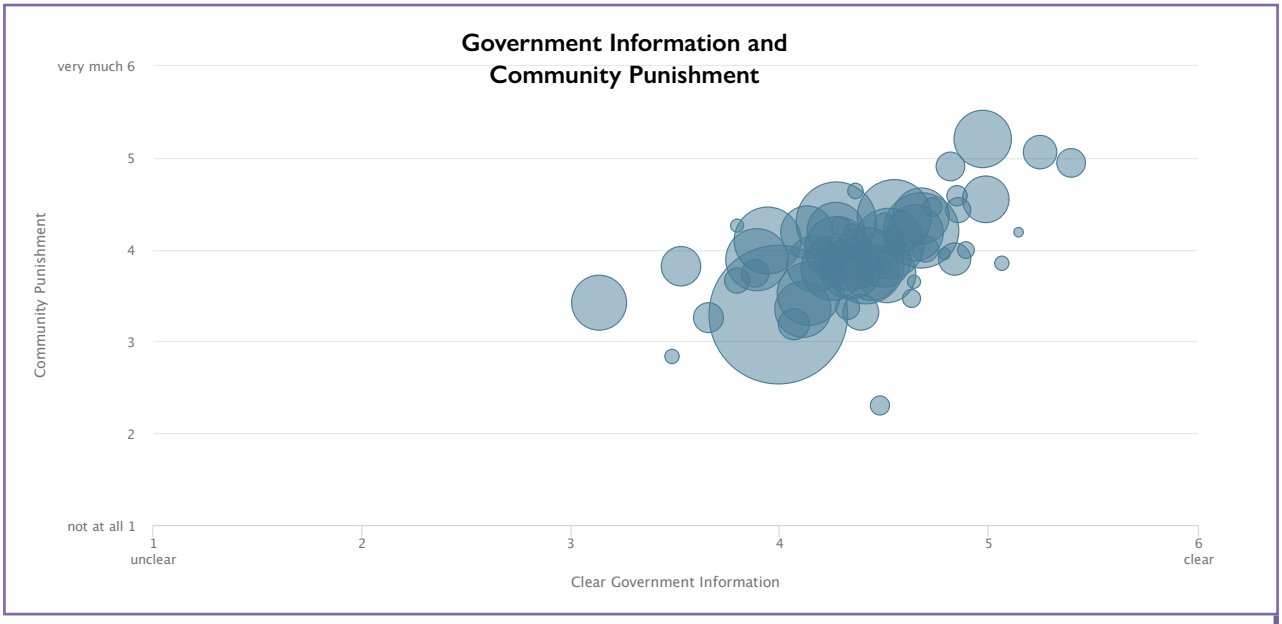

Figure 4. Perceptions that one receives clear information about the coronavirus from the government (x-axis) and that one's community punishes those who deviate from rules (y-axis).

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HOW DO WE LEARN TO WRITE?

By Cindi May and Michael Scullin

Treiman R. Learning to Write Words. *Current Directions in Psychological Science*. September 2020. https://doi.org/10.1177/0963721420951585

Mastery of any complex skill—playing the piano, riding a bike, or cooking a gourmet meal—requires integrating many basic skills. Writing, it seems, is no exception. In her recent *Current Directions article*, Rebecca Treiman explores how children learn to write. She examines the knowledge and skills related to writing that children demonstrate long before they can scrawl out legible, grammatical sentences.

Early Knowledge About Writing

Most typically developing kids begin writing their names between the ages of 4 and 6. But evidence suggests that writing skills emerge well before then. Treiman and colleagues believe that children as young as 2 develop an understanding of the visual appearance of writing. Ask your students what kind of findings might support this claim, then review some of the supporting evidence.

First, download this slideshow for use in class: tinyurl.com/APSHow-2write. Have your students look carefully at slide 2, which shows a drawing created by a 2½-year-old. Ask your students if any part of the picture resembles writing. The artist identified the part with small squiggles in the bottom left portion of the picture as writing. Although there are no letters present, that portion of the drawing is small and dense, much like written words, suggesting that even young children recognize that writing looks different from pictures.

Next, show students the images on slide 3. These images were drawn by a 2-year-old who was asked to write the word "sun" and draw a picture of it. Although neither image contains letters, most students will find it fairly easy to correctly identify the image on the left as the drawing and the one on the right as the word. Otake, Treiman, and Yin (2017) found that very young children asked to write a word drew smaller scribbles than did those asked to draw a picture. When writing "words," children were also more likely to choose a pen or pencil than a crayon. Both findings suggest some understanding of the visual appearance of writing.

If children develop expectations about the appearance of written language, those expectations may lead children from different countries to produce drawings that resemble their native language's writing. That is precisely what Otake and colleagues demonstrated in a series of studies with young children (2–5 years old) from the United States and China (Otake et al., 2017; 2018). Children from both countries were asked to write specific words in their native language, and adults who knew both English and Chinese were asked to judge whether each sample was made by an American or Chinese child. To help students understand what these drawings looked like, show them slide 4, which includes sample drawings from an American and a Chinese child writing the word "sun" in English and Chinese, respectively. The bilingual adults in the study could determine the native language of the writers with better-than-chance accuracy, even for 2- and 3-year-old artists; see if your students can do the same.

Representing Sounds in Words

Treiman and colleagues also show that learning to write, particularly the spelling component of writing, is heavily influenced by personal experience. Children who can spell their own name, for example, use that knowledge in writing other words. Thus, a child named Lily is likely to be good at using the letter "l" and so will be better at spelling words like "lip" and "letter" (Zhang & Treiman, 2020). Similarly, children who know letter names are often better at spelling words that sound like the letters (e.g., they may find "deal" easier to spell than

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"dirt" because the first two sounds of the word "deal" sound like the letter "d"; Treiman & Wolter, 2020). Some of these influences are evident in slides 5 through 7, which show sample writings from a kindergarten student just learning to write. On slide 6, for example, note how well the child writes his friends' names (which are commonly displayed in kindergarten classrooms). In reviewing these slides, your students might also note some common errors made by young writers, including the omission of middle letters and confusion of upper- and lowercase letters.

Given the influence of experience on writing, it is not surprising that direct instruction improves fluency in writing and reading. Students who learn phonics, with a specific emphasis on the correspondence between letters and their sounds, are better at spelling and reading (Ehri, Nunes, Stahl, & Willows, 2001). The same is true for those who receive explicit instruction in spelling (Graham & Santangelo, 2014; Ouellette, Martin-Chang, & Rossi, 2017).

The benefit of direct instruction runs both ways. Teachers and parents who understand the knowledge that children glean about language can provide better writing support. Have students examine the image in slide 8, which shows a child's attempt to write the word "triangle." To adults with a solid grasp of phonics, the child's use of "chR" at the beginning of "triangle" might seem way off the mark; however, the first sound in "triangle" is similar to the sound typically spelled with "ch" (as in "cherry"), so instructors should congratulate the child for listening well to the first sound in the word.

Knowledge about language can also help instructors understand when spelling errors do (or do not) signal broader concerns. Have students review slide 9, which shows a child's attempt to spell the word "diamond" ("bimn"). Teachers and parents might worry that the reversal of the letter "d" to a "b" indicates that the child has dyslexia. However, many typically developing children make such errors, which may reflect the knowledge that letters of the alphabet with a vertical stem more often have an appendage that faces right (e.g., "E," "f," "h," "L") than an appendage that faces left.

Accomplished writers know that it takes a lifetime of practice to write effectively. Treiman's work shows why. People continue to learn more about morphology (word structures) and etymology (word origins) over time, and they benefit from both implicit exposure (e.g., reading) and explicit instruction. As a final reflection for students, ask them to rate their own spelling on a scale from 1 (very poor) to 10 (exceptional). Then ask them to reflect on the kinds of experiences that might influence spelling ability and what sorts of social advantages (or disadvantages) could create academic achievement gaps in reading and writing before children even reach school age.

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EDITED BY C. NATHAN DEWALL

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: psychologicalscience.org/publications/teaching-current-directions.

THE TOXIC STRESS STEW: ADVERSITY + REACTIVITY + RUMINATION + TIME

By David G. Myers

Kiecolt-Glaser, J. K., Renna, M. E., Shrout, M. R., & Madison, A. A. (2020). Stress reactivity: What pushes us higher, faster, and longer—and why it matters. *Current Directions in Psychological Science*. https://doi.org/10.1177/0963721420949521

As longtime stress researcher Janice Kiecolt-Glaser and her collaborators Megan Renna, M. Rosie Shrout, and Annelise Madison of Ohio State University explain, adversity is the first ingredient in the recipe for stress. Bad things happen. Relationships produce conflict. A new job entails pratfalls. A pandemic elicits anxiety. In these situations, feeling stress is a natural, adaptive response. Typically, Kiecolt-Glaser and her coauthors note, when the threat passes, the body returns to its resting state: "An adaptive response is flexible and short-lived."

But if the bad events endure, or the person is hyperreactive, stress may become toxic. When threats are "repeated, unpredictable, and uncontrollable"—when, say, a volatile boss berates an employee repetitively and capriciously—then the body's hormonal, cardiovascular, and inflammatory responses will accumulate. The result is "biological wear and tear," and sometimes a shortened life.

An example of the reach on inescapable stress comes from people who endured adversity or abuse early in life. Their stress experiences "are programmed into cells that regulate inflammation," Kiecolt-Glaser and her colleagues explain. The result is a lifelong increase in psychological and biological reactivity to stress. One of the researchers' studies compared people who had been abused as children with those who had not. After experiencing multiple stressors the previous day, those with a history of abuse had more than twice the level of interleukin-6, an inflammation-regulating protein, in their systems.

As this illustrates, what matters is not just adversity but also reactivity. Some people are dispositionally more reactive to stress than others. They experience an exaggerated and prolonged response to stress. Their sustained flight-or-fight reaction depletes energy, especially when exacerbated by pre-stress worry and post-stress rumination.

This overreaction is often compounded in close relationships. For better or worse, couples' stress can be contagious, such that partners catch and feed off each other's stress. And within a group, emotions and attitudes can be similarly amplified. If you catastrophize because you feel threatened by the pandemic or a worrisome election outcome, your stress will likely be intensified if your friends or roommates catastrophize, too.

When adversity meets reactivity and rumination and is sustained over time, it affects not just the body—increasing the risk of various ills and weight gain—but also the spirit. "Depression and stress reactivity have an unhealthy reciprocal relationship," note Kiecolt-Glaser and her coauthors. Reactivity increases vulnerability to both inflammation and depressive symptoms. And a ruminative, depressive tendency heightens stress responses.

To help students reflect on their own stress experiences and stress management, instructors might first invite them to complete Michael Renner and Scott Mackin's (1998) self-scoring College Undergraduate Stress Scale (tinyurl.com/CollegeStressScale). The scale names common stressors identified and rated for stress potency by college students.

Second, instructors could invite students to volunteer the strategies they use to manage their stress reactivity. Do they include the evidenced-based practices advised by Kiecolt-Glaser and colleagues?

- *Yoga and meditation*. The regular practice of yoga or meditation helps reboot and calm the autonomic nervous system, thus lowering inflammation, stress hormones, heart rate, and blood pressure.
- *Healthy lifestyle*. Aerobic exercise, a diet low in sugar and saturated fats, and ample sleep are also antidotes to stress and depression.

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- *Cognitive reappraisal*. Stress is not just what we experience but how we interpret it. Thus, reappraisal, sometimes guided by cognitive-behavioral therapy, helps reduce hyperreactivity.

To live is, indeed, to experience stress. To live a healthy lifestyle is to lessen stress. To practice cognitive reappraisal is to define stressors as challenges from which one can grow.

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For more on the effects of psychological stress, and how to buffer against them, see the collection of articles at psychologicalscience.org/topics/stress.

For additional teaching resources, including tutorials, lesson plans, and tips for improving online learning, visit psychologicalscience.org/members/teaching.

Through his research at McGill University, Bassam Khoury, a professor of education and counseling psychology, explores the relationship between mindfulness and compassion, working to expand how these age-old concepts are applied in clinical and social settings through projects on psychotherapy, addiction, and law enforcement.

BASSAM KHOURY ON HOW MINDFULNESS BREEDS COMPASSION

Bassam Khoury
Spotlight

Current role: Assistant professor in the Department of Educational and Counseling Psychology and director of the McGill Mindfulness Research Lab, McGill University, Canada, 2016–present

Previously: Postdoctoral fellowship in mindfulness psychology, Harvard University, 2014–2016

Terminal degree: PhD in in clinical psychology, Université de Montréal, Canada, 2007–2013

Recognized as an APS Rising Star in 2018

Bassam Khoury is an assistant professor of education and counseling psychology at McGill University, where he studies how mindfulness practices can be applied to improve the therapeutic process for practitioners and their patients. Through his research, Khoury seeks to understand how these practices are embodied and how mindfulness can contribute to building a more compassionate world.

Mindfulness Meets Compassion

I've been doing research on mindfulness since I started my PhD. I am focusing now on defining, conceptualizing, and measuring mindfulness using the new notion of embodied mindfulness. I am also moving toward studying compassion, which goes hand in hand with mindfulness.

Our clinical applications include a project with people who self-harm, a project on addiction, and a project with law enforcement, as well as one exploring how to help new counselors adapt to the ambiguous nature of psychotherapy, where there may not always be structured guidelines for how to meet the needs of each client. We are trying to make a contribution to the definition of mindfulness and to broaden the research related to applications of mindfulness in both the clinical and social spheres.

Starting Out

When I started researching mindfulness for my PhD around 2007 at the Université de Montréal, I faced a lot of resistance from a lot of people in the field. Funding wasn't easy. There was a lot for the field to catch up on in terms of mindfulness and compassion, and many were questioning if they could even be studied scientifically.

Then and now, I have tried to be very direct in how I approach research related to mindfulness and compassion. I relate them to their Buddhist origins. I will not sugarcoat it and say my work came from researchers like Jon Kabat-Zinn (who studied mindfulness-based stress reduction at the University of Massachusetts Medical School). I respect him highly, I think he contributed a lot to the Western science of mindfulness, but also I will speak about mindfulness's Eastern, Buddhist roots. These things clash sometimes, but I want people to understand the implications of mindfulness not as a new-wave strategy or something like that, but as something much deeper. I really appreciate APS for giving me the Rising Star Award because it's not easy sometimes for people to understand the impact and importance of the research we are doing.

Landing the First Job

After my PhD, I wasn't sure where to go. I have a clinical degree, so I was seeing patients, but I wasn't sure about academia. Through my reading, I discovered Ellen Langer, who had become Harvard's first woman professor of psychology in the 1970s. Her perspective on mindfulness is sociocognitive rather than meditative, it's more about changing mindsets and being open to new information and creativity, but I found her very inspiring and very courageous. So, I wrote her an email about trying to put our perspectives on mindfulness together, and I ended up being able to start my postdoc with her.

About 12 months into my postdoc, I applied to the Department of Educational and Counseling Psychology at McGill. I got the job and had to leave my postdoc early. When you get a job, you cannot say no because you don't know when another job will come along.

Embodying Mindfulness

Embodied mindfulness focuses on the link between the mind and the body. An example of embodied mindfulness comes from the Five Facet Mindfulness Questionnaire, which includes the statement, "When I am in the shower, I notice the water on my body." This multidirectional link between the mind and the body is a central part of mindfulness that we are trying to emphasize.

Conceptualizing Compassion

The first element of compassion is a cognitive dimension, meaning how I think about myself or how I think about others. If I think about myself "I'm a horrible person, I'm bad, I'm broken," or if I think about others "They are horrible, they are bad people, they don't deserve anything," things don't go well.

The second part is feeling the emotion of compassion. There is an emotional link between self-compassion and compassion toward others. The feeling of compassion is associated with an internal sensation of warmth (in Buddhism it is called "warm-heartedness"), a feeling of unlimited love with no specific attachment or desire.

The third part is behavioral: how I act or intend to act. Do I act harshly toward myself or others? Do I act kindly toward myself or others?

These are the three main dimensions, and we can add to them an interpersonal dimension—for example, how much I am able to accept help from others, how much I help others, and how much I tend to use my own suffering as a way to connect to others.

Combating Crises With Compassion

The impact of COVID-19 is horrible in terms of the lives that have been lost and are still being lost internationally. At many times, also, I feel sad for the sense among some people that we will almost need to forget about this when it's over, as if it was just a bad episode. What's happened with COVID-19 isn't purely accidental—I would never accuse anyone of intentionally allowing it to spread, but our behavior toward nature and animals in particular has contributed.

I'm not a biological scientist, but I've read many papers saying how COVID-19 came to humans, and the most scientifically appealing argument is that it was transferred from bats or another animal. We are destroying their habitats, which means we are getting in much closer contact with them and other animals that may host infectious diseases than we would otherwise. If we want to save the planet, if we want to prevent another virus like COVID in the years to come, we need to be more mindful and compassionate in how we deal with animals and nature.

Minding the Lab

Students constitute a cornerstone of the McGill Mindfulness Research Lab (mcgill.ca/mmrl). I think every lab has a different philosophy or objective, and for me it's extremely important that they are joining the lab not just because they found my research interesting but because they are committed to making a change, to making a contribution to a field that has value and meaning to others.

From there, my method is to foster this commitment in them. Most of my students have a project that is 100% their own. They ask for my supervision and my contribution, but they focus on what they want.

Do you know an early-career researcher doing innovative work in industry or academia who might be a good fit for Careers Up Close? Contact the *Observer* at apsobserver@psychologicalscience.org.

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Nominations Must Include:

- A one-page to two-page letter of nomination, in English, identifying the specific idea being nominated and delineating the reasons why the idea merits the award, based on the criteria above.
- A current mailing address, telephone number, and e-mail address for the nominee.

Send Nominations (by postal mail or email) **no later than February 28, 2021 to:**

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RETHINKING PSYCHOLOGY'S ATTITUDES ABOUT "ME-SEARCH"

By Andrew R. Devendorf

Andrew R. Devendorf
University of South Florida

Behind closed doors, many of us in psychology have witnessed—and possibly engaged in—banter about whether certain psychologists conduct "me-search," or research that is personally relevant to the researcher. Examples might include a scholar who is transgender and studies transgender populations, or a cancer researcher who lost a loved one to cancer (Gardner et al., 2017). Some of us even poke fun at ourselves for conducting me-search. As a depression researcher with a family history of depression, I identify as one of those researchers myself (Devendorf, 2019).

Although conversations about who is and who isn't a me-searcher tend to be playful, more often than not, me-search is used as a pejorative label, even when we apply the term to ourselves. To favor a more descriptive and less self-deprecating term, I refer to me-search as "self-relevant research" (Devendorf, 2020). It would benefit us all as psychological scientists to step back and ask how undervaluing this research might be harmful to both self-relevant researchers and psychology as a field.

I've been in many situations where students and faculty gossip about possible self-relevant researchers with statements like "There's no doubt that Dr. So-and-so [a substance-use researcher] is a recovering alcoholic," "Ahh, that explains why Dr. X [a workplace-rivalry researcher] is so competitive," and "I saw Dr. Whatshername's talk [about racial health disparities]—of course she's Black." Statements like these suggest that self-relevant research cannot be trusted because the researchers are biased by their personal history. It's also been said that people who conduct self-relevant research are self-involved and interested only in learning about themselves, rather than contributing to science. No empirical evidence exists to support or refute these claims, and other scholars have noted similar observations about prejudice toward self-relevant research (e.g., Gardner et al., 2017; Victor et al., in press). So where do these negative stereotypes originate?

Screening for Self-Relevant Researchers

These stereotypes may begin to manifest before psychology students even enter graduate school. Application resources for clinical psychology students advise them not to disclose a personal history related to their mental health research area, as this may cause admissions committees to reject otherwise strong applicants. One renowned graduate school guide states that clinical psychology applicants are "often screened out" for disclosing their own psychopathology (Prinstein, 2017, p. 24). While the guide's author, Mitch Prinstein, does not necessarily agree with this practice, his candid observations appear to generalize across programs. A survey of 457 psychology graduate programs reached the following conclusion:

"A [kiss of death] may occur 'when students highlight how they were drawn to graduate study because of significant personal problems or trauma. Graduate school is an academic/career path, not a personal treatment or intervention for problems.'" (Appleby & Appleby, 2006, p. 20)

Acknowledging that stigma against self-relevant researchers appears to exist in psychological science, with real professional repercussions (e.g., rejection from graduate school), we should next examine whether such negative assumptions about self-relevant research are warranted.

Does Self-Relevant Research Cloud Objectivity?

Bias against self-relevant research may result from the assumption that lived experience with a research topic might obscure a researcher's objectivity. The rationale is that the pursuit of self-relevant topics may interfere with someone's ability to remain impartial when evaluating findings. To my ➡

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knowledge, there is no study that has evaluated these claims. But even if a study did conclude that self-relevant researchers' interpretations were influenced by their experience, this bias isn't unique to self-relevant research, nor does it prevent self-relevant researchers from conducting ethical and rigorous research. How is conducting self-relevant research so different from testing any other theory? All research is shaped, to some extent, by a researcher's identity, intentions, and values. Researchers attempt to mitigate these biases through openness, transparency, and use of the scientific method (Patton, 2002). Our field should question whether stigmatizing the disclosure of relevant lived experiences aligns with this goal.

If psychology stigmatized everyone who is suspected of self-relevant research, our field would lose many important figures. In clinical psychology, we would lose Marsha Linehan, the founder of dialectical behavior therapy, the gold-standard treatment for borderline personality disorder (BPD). At age 68, Dr. Linehan disclosed her experience living with BPD (Carey, 2011). We would lose Thomas Joiner, a leader in suicide research, who disclosed that he had lost his father to suicide (Joiner, 2007). We would lose Stephen Hinshaw, a leader in the fight against mental health stigma, who has chronicled his father's recurring mental illness and the stigma surrounding it (Hinshaw, 2017).

These individuals are not exceptions. While its prevalence is unknown, possibly because there are few incentives for people to disclose their experiences, self-relevant research is likely more common than we acknowledge.

A Strengths-Based View

To be clear, self-relevant research is not always viewed negatively; some researchers acknowledge its potential benefits (Victor et al., in press). In favor of a more balanced view, consider how the pursuit of self-relevant research can strengthen the field (Devendorf, 2020).

Intrinsic motivation and passion. Scholars frequently endure distress and delayed gratification from endless hours of data collection, grant writing, and jumping through the hurdles of publishing. The brunt of these obstacles may be offset in individuals who find meaning, passion, and intrinsic motivation in their work, which may be more common in people who conduct self-relevant research. To quote Linehan on her experience with BPD, "I was in hell. And I made a vow: When I get out, I'm going to come back and get others out of here" (Carey, 2011).

Insight and creativity. People with lived experience may be in a unique position to develop out-of-the-box research questions, since research is often removed from real-world settings. Linehan, for instance, developed the therapeutic concept of radical acceptance from her own treatment experiences (Carey, 2011).

Promote diverse perspectives on important, but underrepresented, research. Unfortunately, not all research is given equal attention. For most of psychology's history, research was conducted by White men who may not have had the interest, curiosity, or knowledge necessary to pursue research on topics with which they had no lived experience. This history has disproportionately affected members of minority groups and others who are underrepresented in positions of power. Only recently, for instance, have psychological scientists begun to study gender as a continuum, as opposed to a man/woman binary. If members of minority groups are judged for conducting "me-search," then who *should* tackle these topics?

A Different Response

This article is not arguing that self-relevant research is superior to non-self-relevant research, and I'm certainly not advocating that everyone who does self-relevant research start disclosing their lived experiences in every situation. Rather, it's time for us, as professionals in psychological science, to reconsider how embracing self-relevant research can benefit the field.

The next time a graduate admissions committee reads a personal statement and feels distaste when the applicant suggests they're pursuing self-relevant research, members of the committee should ask, "Why am I having this reaction?" Instead of stigmatizing the applicant, why not appraise them, and their future self-relevant work, on more meaningful, objective criteria? After all, acceptance of self-relevant research and the disclosure of lived experience can be a boon for all of psychological science.

See the full article with reference list at psychologicalscience.org/observer.

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GRANTS

Closing soon! Center for Advanced Study in the Behavioral Sciences 2021-22 Fellowships

The Center for Advanced Study in the Behavioral Sciences (CASBS) at Stanford University is now accepting applications for residential fellowships for the 2021–22 academic year.

Applications from scholars and thinkers who are minorities broadly defined, women, and those who represent a wide variety of institutions and countries are encouraged. CASBS is particularly eager to receive applications from accomplished scholars and thinkers who engage with the significant societal challenges the Center focuses on, described in the link, and the research methods that support them.

Application Deadline: November 9, 2020

For more information, guidelines, and application requirements, visit the CASBS website at casbs.stanford.edu/apply-casbs-fellowship.

NIH Research Opportunities Related to COVID-19

In response to the rapidly evolving situation surrounding COVID-19, institutes within the U.S. National Institutes of Health (NIH) have issued notices of special interest (NOSIs) designed to allow researchers to apply their existing NIH research grants to COVID-19 research. These NOSIs offer competitive revision and administrative supplement opportunities that differ in scope and research area depending on the issuing institute; they allow researchers across all fields, including psychological science, to contribute their expertise and research projects to the growing body of COVID-19 research.

To view a compilation of these opportunities and additional information of potential interest to psychological scientists, visit the NIH's Office of Behavioral and Social Science Research at obssr.od.nih.gov/research-support/funding-announcements.

NIMH Research Opportunities Related to COVID-19

The National Institute of Mental Health (NIMH) has issued a funding opportunity announcement supporting new research institutions to study suicide prevention. In the face of rising suicide rates in the United States, NIMH has developed a goal to reduce the suicide rate by 20% by 2025. To achieve this goal, NIMH has prioritized studies that convene and employ a transdisciplinary team of researchers.

Research institutions should apply to support the rapid development, testing, and refinement of innovative approaches for:

- identifying, preventing, and treating suicide risk within well-defined target populations, with an emphasis on high-risk and underserved groups;
- organizing and delivering optimized suicide prevention services within real-world settings where at-risk individuals are served;
- continuously improving the quality, impact, and sustainability of optimized interventions and service delivery strategies within diverse care systems.

NIMH will be accepting applications at various due dates from October 19, 2020 through January 26, 2022. 30 days before the due date, research institutions must submit a letter of intent.

Through this grant, NIMH can provide awardees up to $2 million per year for up to 5 years.

Learn more at bit.ly/34ZUV45.

NSF Funding to Support Transition From New Research Discoveries to Innovation

The National Science Foundation (NSF) offers researchers the opportunity to transition their research from discoveries to the marketplace through the Partnerships for Innovation Program (PFI).

The solicitation supports efforts on two tracks. The Technology Translation track provides the opportunity to turn NSF-funded research into technological innovations with promising social impact. The Research Partnerships track has similar goals but supports larger, complex, multifaceted technology development projects that require the involvement of more than one researcher or institution. This track requires the creation of a partnership between academic researchers and a third-party organization (e.g. industry, a federal laboratory, a public or nonprofit technology organization).

Deadline: January 13, 2021

Learn more about the PFI program at bit.ly/3ac7JDw.

MEETINGS & EVENTS

Join APS this fall to attend live webinars and enjoy recordings of past events. Visit psychologicalscience.org/conventions/virtual to learn about the Student and Early Career Webinar Series; Government Research, Funding, and Policy Webinars; and other virtual events.

2021 APS Virtual Convention
May 26-27, 2021
Online event
psychologicalscience.org/convention

13th Annual Conference on the Science of Dissemination and Implementation in Health
December 15-17, 2020
Online event
academyhealth.org/events/2020-12/13th-annual-conference-science-dissemination-and-implementation-healthresearch

SOBC Capstone Virtual Research Conference
February 22-23, 2021
Online event
commonfund.nih.gov/sobc-capstonemeeting

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Michael Hout
National Science Foundation

PLAYING PAC-MAN AND SHAPING THE FIELD

Cognitive psychologist **Michael Hout** recently began a two-year rotation as a program director of the Perception, Action, and Cognition (PAC) program at the U.S. National Science Foundation's Division of Behavioral and Cognitive Sciences.

You taught psychology at New Mexico State University. What prompted your transition to the National Science Foundation?

I have long been interested in working with NSF, where I had been a proposal reviewer and grant panelist. I'm a two-year rotator, which means at the end of my time here, I will head back to New Mexico State University full time. This arrangement is a good fit for me because I'm not ready to move away from being a full-time researcher and educator just yet. This position also allows me independent research and development time to keep my laboratories at NMSU going (remotely). Most importantly, my position at NSF lets me truly give back to the scientific community, helping shape the field of perception, action, and cognition. I will also gain insight into how the process of federal funding is managed and how to become a better grant proposal writer.

Can you tell us a little bit about the grant program you oversee at NSF?

Along with Betty Tuller, I co-direct the program in Perception, Action, and Cognition (PAC), which funds research on a wide variety of topics related to "typical" human behavior. Additionally, we frequently collaborate with other programs in the Social, Behavioral, and Economic Sciences Directorate (e.g., Cognitive Neuroscience, Developmental Science, Science of Learning, Linguistics and Social Psychology) and across other directorates.

How can federal funding help start an academic career?

The short answer is that it can be a springboard to success and the start of a productive career. Beyond simply the prestige of an NSF award, federal funding is great for new academics who may not have large startup packages; it can allow for the purchase of crucial laboratory equipment and the funding of graduate students or postdocs; it can allow you to interact with and provide service to the wider community.

How can students and early-career scientists engage with NSF?

Start at NSF's website (nsf.gov). Learn what programs fund the kind of research you are involved in, and reach out to the respective program directors (PDs). Look at what NSF has funded recently so you have an idea of where the field is headed and what gaps are not being filled. Offer (to the PD) to be a reviewer or panelist. Go to the "NSF Days" that happen at various institutions, or attend webinars when they come up. And get started early. Grads, that means consider applying for NSF's Graduate Research Fellowship Program.

What are some benefits of short-term government service for psychological scientists?

I think the rotation model is smart for both NSF and for the field. For psychological scientists like me, it means the chance to provide service and shape the field at a macro level without transitioning out of my research, teaching, or mentorship. In the end, I think it will make a better researcher out of me.

What's one thing that you were surprised to learn about NSF?

I had a misconception that government agencies are run in a one-size-fits-all kind of way, which couldn't be further from the truth. Programs inside NSF are extremely variable, and for good reason. They are developed over time—by the permanent and rotating PDs, in collaboration with their supervisors—to best fit the needs of the PI community that they are serving. The result is that each program molds itself and its procedures over time.

See this article online for a longer version of this interview at psychologicalscience.org/observer/hout.

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