BRAINS AND BACTERIA

The Intersection of Microbiology and Psychological Science

What’s in our guts can affect what’s on our minds. Psychologists and microbiologists collaborate to explore the relationships among gut microbes, mood, behavior, and the immune system.

How Mitochondria Keep Our Brains and Minds Moving

These energy-generating organelles — believed to have begun as bacteria themselves — are implicated in learning, memory, cognition, and mental and neurological afflictions.

Presidential Column

The Mind-Body-Environment Connection

In a guest column, renowned architecture critic Sarah Williams Goldhagen applauds psychological science for fostering new understanding about the links between our surroundings and our health, well-being, and development.

Meet the New Editor of Perspectives on Psychology Science

APS Fellow Laura A. King begins a 3-year term as Editor of Perspectives in Psychological Science in January, and says she wants the journal to showcase, among other things, insights from a wider range of authors — including scientists from underrepresented groups.

Award Address

The Social Defense

Through lab experiments and field studies with survivors of historic wildfires, APS James McKeen Cattell Fellow Richard A. Bryant has demonstrated the power of relationships and community to temper psychological trauma.

The Cooperation Revolution Is Making Psychological Science Better

A group of authors touts a new era of collaboration, with scientists sharing innovative methods and promoting scientific rigor and transparency.

Leveraging Learning Principles Online

APS Past President Morton Ann Gernsbacher designs her online psychology courses to encourage students to engage with content more deeply than they might in traditional college classes.

How to Make the Most of Meetings

Lab check-ins, advisory meetings, and other confabs can be tedious and unproductive, but a new report in Current Directions in Psychological Science shows evidence-based strategies for maximizing meeting quality.

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Teaching Current Directions in Psychological Science

“When More Isn’t Better: The Costs of Extreme Personalities” by C. Nathan DeWall

“The Gaps Among Us: Understanding and Assessing Inequality” by David G. Myers
It’s Time to Renew Your Commitment to Psychological Science & 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.

Renew your APS membership and continue to support the important work that APS does to benefit your career, your science, and society.

The Mind-Body-Environment Connection

Psychological science commands an impressive amount of real estate in the empirical landscape. Land parcel by parcel, teams of researchers seed and nourish their singular contributions. Their combined work helps to cultivate new insights into the human condition, along with actionable knowledge which clinicians, policy-makers, and corporate executives draw upon in the hopes of nudging their corner of the earth a tiny bit further toward better understanding, or perhaps a tiny bit higher on the Happiness Index.

How architecture and urban design figure into this ferment might seem more than a bit . . . well, secondary. Yet consider a fistful of recent findings. Feelings of awe, whether in buildings or in landscapes, promote prosocial emotions and cognitions by diminishing our estimation of our own self-importance while buttressing our sense of commonality with others. Whether our suffering originates in psychic injuries or surgical procedures, healing advances much more quickly when patients enjoy views of pastoral landscapes, whether they are whitened by snow or greened by the ample light and increased warmth of summer. Easy access to well-designed, high-quality natural spaces also supports longevity in the elderly and fortifies emotional regulation and attentional control in the young. The government bureaucracy or private company looking to boost work productivity and employee retention while simultaneously decreasing absenteeism and presenteeism — huge annual cost drains to any employer — might consider jettisoning weekly community-building parties or other team-building events, and investing instead in the work environment, improving the HVAC (heating, ventilation, and air conditioning) system, reconfiguring interior spaces to admit more natural light, and configuring rooms and corridors to nurture sociability. And whatever the workplace setting, managers should demand office environments that encourage employees to personalize their workspace, because place attachment substantially nurtures well-being and demonstrably enhances job satisfaction.

These and other such findings, taken in aggregate, are shifting how scientists assess the physical context’s centrality to how humans think, act, and interact with one another. Roger Barker, one of the founders of environmental psychology, published findings from the early 1950s to the mid-1970s demonstrating that, when it comes to predicting human behavior, physical and social context matter more than an individual’s internal world. But among psychological scientists, behaviorism ruled supreme until the 1980s, and many regarded even the notion of a recursive mind-body feedback loop with skepticism. The importance of the role of the design of our physical surroundings to human health, well-being, and development (cognitive, emotional, and social) remained at best a fringe pursuit.

Oddly enough, this orientation was eventually upended by computer scientists’ drive to develop artificial intelligence so that computers could be trained to “think” in the way that a human does was proving far more...
difficult than they expected. Algorithms based on logic alone didn’t work. The cognitive scientists figured out a major reason why, which is that computers don’t live in human bodies or think with embodied, human minds. Thus cognitive science and its younger stepister, cognitive neuroscience, were born, the first in the 1960s, the second by the 1980s. Fast forward to the present, and we find a subterranean revolution of sorts rumbling. Superseding the widely-accepted Mind-Body connection is a new paradigm: it’s the Mind-Body-Environment connection to which we must attend.

For most people, most of the time, the environments people inhabit have been deliberately constructed. They are built environments. That means everything about them came about by decisions and choices made by deliberation or by default. And this fact of modern life bears crucial implications, because every decision made about the built environment — whether a playground, a park, a bridge, a street, a residential housing project or suburban development, an office building — could have been, and could be made otherwise.

Built environments, their atmosphere and their constructed details, seep into psychology’s domain in fundamental, if overlooked, ways. For example, in contemporary culture, identity is a fraught and commonly discussed subject. Psychologists have long recognized the centrality of autobiographical memories to the construction of a coherent self or (succession of selves). Now, cognitive neuroscientists have demonstrated that such memories are neurologically consolidated in the hippocampus, which is the part of the brain that also largely manages spatial navigation. It’s likely, then, that every autobiographical memory is in some way bound up with the physical context in which it was first encoded and continues to contain a meaningful sliver of place.

Stress constitutes another frequently-investigated domain of psychological science. While a moderate amount of stress can provide a meaningful sliver of place.

The emerging Mind-Body-Environment paradigm has far-reaching implications. We are only at the beginning of this revolution, and much needs to happen before people as individuals, policy-makers, designers, and clients accord to the built environment a value commensurate with its impact, positive and negative, on people’s emotions, cognitions, performance, and physical and mental health. General education on the importance of high-quality physical environments to a wide range of human factors should start before college (in Europe, this happens under the guise of teaching young students about the importance of their heritage, which is physically embodied and spatially dispersed). Designers of all sorts — architects, landscape architects, civil engineers, urban designers — should receive training in at least the basics of environmental psychology and allied disciplines, which currently is quite rare. Private sector players and policy makers need to understand that the calculus is changing, and investing in Human Centered Design constitutes a luxury, but a necessity.

Klatzky, Bonanno, MacCoun Honored With 2019 APS James McKeen Cattell Fellow Award

Robert L. Klatzky
Geography A. Bonanno
Robert J. MacCoun

APS Past Treasurer Roberta L. Klatzky and APS Fellows George A. Bonanno and Robert J. MacCoun have received the 2019 APS James McKeen Cattell Fellow Award.

Klatzky is a professor in the department of psychology as well as at the Human-Computer Interaction Institute at Carnegie Mellon University. She researches perception and action, focusing on touch architecture; Biophilic Design? Or simply, Human Centered Design? Whatever it’s called, laboratories such as the Centric Lab at University College London, the WELL Living Lab at the Mayo Clinic in Rochester, Minnesota, and the Urban Realities Lab at the University of Waterloo in Canada are up and running. More will surely follow.

Sometimes, revolutions do happen, and the fruitful, thought-provoking intersection of cognitive neuroscience and psychological science with built environmental design just may produce one.

*―Denis Kolbner, UC Berkeley, Julio Bermudez, Catholic University*
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Check out the third issue now available at: www.psychologicalscience.org/ampps

King Plans to Expand Diversity of Authors, Viewpoints in Perspectives

APS Fellow Laura A. King in January will begin a 3-year term as editor of Perspectives on Psychological Science. King is Curators’ Distinguished Professor of Psychological Sciences at the University of Missouri. She researches personality psychology, well-being, motivation, meaning in life, individual differences in intuitive information processing, and narrative approaches to personality and identity, among other topics. She is the author of two psychology textbooks and numerous scholarly articles and book chapters. She has served as associate editor for a number of journals in personality and social psychology and has served as editor of the Journal of Personality and Social Psychology. The Observer recently asked King a few questions about her plans for the journal.

What goals do you have for the journal under your tenure? Do you plan any significant changes or additions to the journal itself or to the types of articles being published?

My goals are to steer the journal toward increased representa-
tion of scholars from broad areas of psychology. I hope that everyone comes to see Perspectives as I do — as the place where all of us, whatever our specialty, are once again just “psychology majors”. So, my hope is that the articles will reflect the intellectual diversity of our science. I hope to increase, as well, the diversity of authors and perspectives. I have always felt that science is a conversation. To me, that is nowhere more apparent than in the pages of Perspectives. That conversation includes many people from all areas and all levels of seniority, and all kinds of ideas. I welcome and actively invite folks to let me know what they are longing to hear about, what they themselves would like to say, and to “host” this fascinating, irresistibly interesting conversation as editor of Perspectives. I want to be surprised, engaged, and fascinated by good ideas.

One of the things that makes this journal stand out is that it, like all of APS’s journals, captures the full scope of psychological science. How will you preserve that breadth during your editorship?

I teach introductory psychology. That means that I, like many others, have had to master and share research from all of our science. Although I am a personality/social psychologist who studies well-being, I am a generalist in terms of my interests in psychological science. I love reading work from areas outside my own. I would give a special shout out to compara-
tive cognition — I believe that some of the work being done in this area is the most interesting and most provocative a person could encounter. Sometimes, to me, it has seemed as if researchers in areas that are easiest to describe in brief are the ones who publish in the most general journals. I hope to change that perception so that everyone with something important to say finds a place in Perspectives. I am also inter-
terested in hearing about the controversies that exist in fields outside my own and hope to highlight these in Perspectives. As a personality psychologist, one has little choice but to develop some expertise across psychology because our field is so broad. So, I see it as a true pleasure to get the chance to highlight important issues across all of psychological science.

What goals do you have for the journal under your tenure? Do you plan any significant changes or additions to the journal itself or to the types of articles being published?

What do you want prospective authors to consider when thinking about submitting to the journal? In addition to meta-analyses and longer, integrative review articles, are there other types of submissions you would like to see?

Quite frankly, I would love for people to consider the most interesting things they think, know, or suspect and consider writing these for Perspectives. I would love to publish dia-
logues that engage and model dispassionate discourse. Fol-
lowing on [Past Editor] Bobbie Spellman’s initiative, I am happy to consider replications for the journal. I would also love to feature a scholarly discussion of replication issues and what they mean for our science. Indeed, whenever conversations about these issues occur on Twitter or in blogs, I cannot help but think how much better it might be — how many more people would be reached, how many viewpoints might be shared — if the ideas were subjected to peer review and published in an outlet like Perspectives.

So, I suppose I would like to issue not only an invitation but a chal-
lenge to authors who believe they have something important to say on this issue. Let’s move some of this intellectual heat to a scholarly outlet and see if we cannot have a conversation that brings light to our shared interest in excellent science.

Do you plan to develop special features or series in Perspectives? If so, what topics will you be focusing on?

In keeping with my goal to enhance diversity not only in the intellectual breadth of Perspectives but also in the authors and viewpoints, one of my goals is to feature brief contributions by individuals from underrepresented groups, sharing their strategies for success. I cannot tell you how many times I have been in conversations with people on the issue of the dearth of women and minorities in editorial work. “Why,” people ask, “don’t women/minorities edit, review, join ed. boards, etc.” My hope is to bring attention to those who do do these things, and do them well, so that others can come to appreciate the place of engaging on this side of the publication process in a rich scholarly career. ☀

Laura A. King

King is Curators’ Distinguished Professor of Psychological Science at the University of Missouri. She researches personality psychology, well-being, motivation, meaning in life, individual differences in intuitive information processing, and narrative approaches to personality and identity, among other topics. She is the author of two psychology textbooks and numerous scholarly articles and book chapters. She has served as associate editor for a number of journals in personality and social psychology and has served as editor of the Journal of Personality and Social Psychology. The Observer recently asked King a few questions about her plans for the journal.
CALL FOR APPLICATIONS

James McKeen Cattell Fund Fellowship

Presented in partnership with
Association for Psychological Science
Application deadline: January 15, 2019

For over half a century, the James McKeen Cattell Fund has provided support for the science and the application of psychology. The James McKeen Cattell Fund Fellowships supplement the regular sabbatical allowance provided by the recipients’ home institutions to allow an extension of leave time from one to two semesters.

The maximum award is limited to the lesser of (1) half the recipient’s salary for the academic year, (2) an amount less than half salary that will bring the total of the university allowance plus the award up to the individual’s normal academic-year salary, or (3) a ceiling of $40,000.

Eligibility Requirements
James McKeen Cattell Fund awards are available to psychologists and other researchers in the broad field of psychological science who are faculty members at colleges and universities in the United States and Canada and are eligible, according to the regulations of their own institutions, for a sabbatical leave or its equivalent.

Candidates are eligible for a Cattell Award if they are currently tenured or will have formal University or College confirmation that they will be tenured by February 1, following our January 15, 2019 submission deadline.

Candidates are eligible for a Cattell Award if they have not had a leave with pay for the 5 years preceding the requested sabbatical leave (medical or pregnancy leaves are considered exceptions).

Prior recipients of a Cattell Fund Award are not eligible.

To be eligible for this year’s awards, candidates must not be on sabbatical at any time during the Academic Year 2018–19. Sabbaticals must be for the Academic Year 2019–2020.

The deadline for submissions is January 15, 2019.
Applications may be submitted online: www.cattell.duke.edu/cattappl.html.

Questions?
Christina L. Williams
williams@psych.duke.edu
www.cattell.duke.edu

For over half a century, the James McKeen Cattell Fund has provided support for the science and the application of psychology. The James McKeen Cattell Fund Fellowships supplement the regular sabbatical allowance provided by the recipients’ home institutions to allow an extension of leave time from one to two semesters.

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Questions?
Christina L. Williams
williams@psych.duke.edu
www.cattell.duke.edu
31st APS Annual Convention

Cross-Cutting Theme Programs
Leading researchers from across psychological science to discuss integrative topics in these featured programs. They are accompanied by posters related to the theme topic.

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Hunter College, The City University of New York
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University of Michigan
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Psychological Science and Policy
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Submit your poster related to one of these theme programs today.
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Avani Mehta Sood, University of California Berkeley School of Law
Jeffrey J. Rachlinski, Cornell Law School (Discussant)
David L. Faigman, University of California Hastings College of the Law
Elke Weber, Princeton University

Presidential Symposium
Barbara Tversky (Chair)
Teachers College, Columbia University and Stanford University

Plenary Speakers
Fred Kavli Keynote Address
Michael Tomasello
Duke University and the Max Planck Institute for Evolutionary Anthropology, Germany
Closing Keynote Address
Betsy Levy Paluck
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Closing Keynote Address
Barbara Tversky (Chair)
Teachers College, Columbia University and Stanford University

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Distinguished Lecturer
Tania Israel
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Opening Plenary
Betsy L. Morgan
University of Wisconsin, La Crosse

Closing Plenary
Neil Lutsy
Carleton College

Concurrent Sessions
Natalie Ciarocco
Monmouth University

Wind Goodfriend
Buena Vista University

Jessica Hartnett
Gannon University

David S. Kreiner
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Bridgette Martin Hard
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University of Michigan

Nadine Kaslow
Emory University

Nora S. Newcombe
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Submit your poster for presentation at the Teaching Institute.
www.psychologicalscience.org/conventions/annual/teachinginstitute

APS Award Address
The Social Defense
Richard A. Bryant Shows How Social Supports Buffer Against PTSD and Depression

On February 16, 1983, after years of severe drought, a series of nearly 200 fires now known as the Ash Wednesday bushfires swept through southeastern Australia. The wildfires displaced thousands of people, many of whom would later lose their homes, and resulted in nearly 100 deaths and more than $1 billion in property damage.

Of the many psychological hardships that the disaster caused survivors, one in particular interested APS James McKeen Cattell Fellow Richard A. Bryant: the effect of being temporarily separated from a caregiver during a traumatic event as a child.

Psychological scientists have long known from studies of orphans in areas such as Romania after World War II that enduring abuse and trauma as a child without parental support can inhibit a person’s ability to form secure relationships throughout their lifetime. The Ash Wednesday bushfires, however, took place largely in one day, separating kids from their parents nearly at random depending on whether they were at school when the evacuation order went out. This unfortunate chain of events offered researchers a unique opportunity to study attachment, said Bryant, a professor of psychology at the University of New South Wales, Sydney, during his Award Address at the 2018 APS Annual Convention in San Francisco.

More than 800 children were psychologically assessed after the Ash Wednesday bushfires. Twenty-eight years later, Bryant and colleagues surveyed 500 of those now-adults and found that those who were separated from their parents during the fire were significantly more likely than those who were not to have an avoidant, insecure attachment style, which in turn translated to higher rates of post-traumatic stress disorder (PTSD).

“I’m not saying that’s the only explanation for this,” Bryant said. “This could also then have led to a cascade of different parenting styles and all sort of things that might have contributed to it, but it’s a teasing, tempting interpretation that just having that brief separation through a very, very intense time of threat can actually threaten one’s attachment style.”

How Attachments Are Born
Attachment theory was first popularized more than 50 years ago by British psychological scientist John Bowlby and further supported by Harry Harlow’s classic study of infant rhesus monkeys. While psychological scientists previously believed that infants bonded with their mothers simply to maintain a source of food, Harlow found that orphaned monkeys spent the majority of their time cuddling a soft cloth “mother” rather than a functional wire one equipped with a milk bottle.

“What the ‘monkey’ was doing here is giving comfort, contact, and of course this is a hardwired need that we have,” Bryant said. “From a very young age we, and other species, have to rely on our attachment figures as a way of surviving. They feed us, they protect us, they nurture us in times of need.”

When those needs for social support are met, Bryant explained, children can internalize that secure attachment, allowing them to activate a mental representation of the people they are close to even when no one is there to support them. Having an inconsistent or abusive attachment figure, on the other hand, can cause children to develop an insecure attachment style.

Psychological scientists have long known that the relationships we form in childhood can shape our interactions across the lifespan, but it remains to be seen if we can actively alter these attachment styles, said APS James McKeen Cattell Fellow Richard A. Bryant.
PTSD, Bryant said. Cognitive-behavioral modification (CBM), however, may provide an avenue for insecurely attached people to become more secure and thus more resilient to trauma. CBM is based on the idea that people with anxiety conditions have an interpretive bias that leads them to view ambiguous stimuli as threatening or negative. Bryant explained. The training is designed to help anxious people appraise events more objectively.

“By focusing on the individual level, we’re actually missing out on a lot of important data, and that’s important not just for theoretical reasons but also for policy and planning.” —Richard A. Bryant

Bryant led a study to test the CBM procedure by presenting 80 anxious attachment individuals with a set of 64 social scenarios such as the following:

“You realize you made a mistake at work and are afraid to tell your boss the next day. You talk to one of your parents about it and vent your anger.

The participants then have to complete the sentence using one of two incomplete words. Those in the attachment condition were given more ambiguous stimuli as being roughly the same, interpretation, Bryant explained. A participant who views someone’s entire attachment system, he acknowledged. CBM for anxiety started out this way as well and has since been used successfully to help patients in clinical settings. The real challenge, Bryant said, is to demonstrate that CBM can have the same effect on attachment style, providing one insecurely attached person with the benefits afforded by a more secure attachment style, such as reducing stress-hormone production and intrusive memories.

“It’s a big ask — I’m not sure if we can or not — but it is worth trying,” Bryant said. “We just need to start with the building blocks, which is what we see here, to see what ground we can make.”

Weathering the Storm With Social Networking

Despite the potential for therapies like CBM to improve PTSD outcomes, Bryant said one of his main criticisms of the trauma-research field is its emphasis on individuals rather than on the roles of relationships and community.

“Essentially, what’s saying is that if I’m part of a social network that’s intact, that is protective against depression and PTSD,” Bryant explained. Bryant and colleagues are also analyzing how participants’ attachment styles may overlap within these relationships. Preliminary results suggest that gender may influence the ways that people with secure, anxious, and avoidant attachment styles interact with their communities.

SNA can provide a useful tool for understanding the factors that contribute to conditions like depression and PTSD, especially in the wake of natural disasters, SNA added.

“If you’re talking about an earthquake or a hurricane or something like this, by definition it effect communities, large numbers of people,” Bryant said. “By focusing on the individual level, we’re missing out on a lot of important data, and that’s important not just for theoretical reasons but also for policy and planning.” —Kim Armstrong

To watch video of Richard A. Bryant’s award address, visit www.psychologicalscience.org/r/attachment.
It’s tempting to tell yourself that, or rather your brain, is the only driver behind the wheel when it comes to controlling your mind and body. According to emerging research on bacteria and our brains, however, we may actually have some pretty powerful passengers riding shotgun: the trillions of organisms that make up each of our microbiomes.

Microbiologists estimate that for every human gene in our bodies, there are hundreds, if not thousands, of microbial genes, and that there may be as many as microbial cells in our bodies as human cells. Furthermore, while human DNA may only differ by about 0.1% from person to person, the DNA of our microbial partners can differ by roughly 50% between individuals.

From the bacteria that flourish on healthy human skin to the microbiota that serve as a barrier to pathogens in adults and foster robust development in newborn children, microorganisms perform countless functions that make our lives possible. Of these, the 40,000 species of “human flora” in the gastrointestinal (GI) tract—which includes not just the stomach, but the mouth, esophagus, pancreas, liver, gallbladder, small intestine, and colon—may be among the most influential, write research associates Hamilton, Ontario Canada.

By Kim Armstrong, APS staff writer

Although a relatively small number of microorganisms occupy the uterus and placenta, infants receive a kick start to the colonization and maturation of their gut microbiome from the symbiotic bacteria they encounter as they pass through the vaginal canal, Foster explained. Babies born by Cesarean section would have different bacteria at 6 weeks of age, but they found no such effects to develop a diverse range of microbiota, but breastfeeding can also help transfer some of these beneficial bacteria from the mother.

In a foundational 2004 study by internal medicine researchers at Kyushu University in Japan, germ-free (GF) mice showed more extreme stress responses than did mice with normal microbiomes. GF mice had substantially higher levels of stress hormones, such as corticosterone, in their blood after being restrained in a small tube, but exhibited the same hormone levels as germ-carrying mice when exposed to the anesthetic properties of ether.

Drawing from this work, Foster and colleagues conducted a series of follow-up studies. In a study of 24 rodents, Foster observed GF and typical mice in isolation chambers and elevated mazes before collecting blood and brain tissue samples. They found that bacteria in the gut (or lack thereof) influenced the animals’ behavior, reducing the level of anxiety-like behavior and showing increased exploration.

“The gut-brain axis is all encompassing and actually is designed to put us back to balance,” Foster said at the 2015 Province of Ontario Neuropsychiatric Disorders Family Research Day at the Oppenheimer Center for Neurobiology of Stress and Resilience, led by Mind Body Research Program Director Kirsten Tillisch, have used functional magnetic resonance imaging (fMRI) to investigate the relationship between microbes in the gut and emotional processing in the brain.

In one pilot study, 40 female healthy participants subjected themselves to bacterial challenges for bacterial profiling before undergoing a set of three MRI scans during which they viewed positive, negative, and neutral mood-inducing images. The seven participants with a greater proportion of Prevotella genus bacteria in their systems exhibited decreased activity in the hippocampus while viewing negative images, and reported more negative affect afterward, than did participants with a greater number of Bacteroides genus bacteria. The fMRI scans also detected differences in the density of participants’ white and gray matter, with the high-Prevotella group demonstrating lower hippocampal volume and greater white matter with more coordinated activation, or connectivity, between areas of the brain associated with depression.

While further research is needed to expand on this proof-of-concept study, it’s possible that these patterns of microbial clustering could represent vulnerability factors for psychiatric conditions such as posttraumatic stress disorder and borderline personality disorder as well, the authors wrote.

As part of the Kyushu University study, researchers were able to reduce the exaggerated stress response in the GF mice to baseline levels by reintroducing microbes into their systems 6 weeks of age, but they found no such effects when the microbes were introduced after the mice had fully matured. Studies from Foster’s lab showed that although “conventionalized” adult mice exposed to microorganisms developed complete microbiomes, it wasn’t enough to alter their GF-related reduced anxiety-like behaviors.

This suggests there may be a critical period in the development of the hypothalamic-pituitary-adrenal axis and the central nervous system (CNS) during which microbes can influence behavioral traits that become resistant to change in adulthood, Foster and colleagues wrote in Communicative and Integrative Biology.

Defending Against Disease Threat

Not all of the microorganisms that exert influence over our brains through the stomach and other organs are helpful to us, of course. One of the most extreme examples of this, according to Mats Lekander, a professor of health psychology at Stockholm University and the Karolinska Institute in Stockholm, Sweden, is a genus of fungi known for turning ants into “zombies”.

When an ant is infected with Ophiocordyceps, the zombie fungus releases a series of compounds tailored to hijack the ant’s CNS. This allows the fungus to chemically manipulate the ant into climbing and latching onto nearby vegetation before killing the hosts at which point hyphae—branches of fungi—grow from the shell of the ant to disperse new spores and repeat the cycle.

Though fungi is only able to exert this behavioral control, however, when the species of Ophiocordyceps and the species of ant coevolved together—if the fungus doesn’t “recognize” an ant’s biology, it releases a different set of compounds that simply doesn’t work.

The microorganisms that typically infect human hosts may not have such dramatic aims, but the struggle to secure the survival of our genes has resulted in the evolution of a range of immune defense strategies, Lekander continued.

The immune system not only collects information about foreign invaders; it also signals the brain to carry out defensive behaviors in response to microbial threats.

Using fMRI, Lekander and colleagues investigated how white blood cells with receptors that act as the “eyes of the immune system” interact with bacteria and then the brain. Half of the 48 participants were injected with lipopolysaccharides (toxins from bacteria cell walls), while the control group received saline placebo. Several hours later, volunteers who received these “endotoxins” reported back pain and general discomfort, among other symptoms. According to the fMRI scans, they also exhibited greater connectivity between the left anterior insula and the left middle cingulate cortex, regions

The Intersection of Microbiology and the Psychological Science

A Bacterial Balancing Act

Our relationship with microbes begins mostly at birth, said Jane A. Foster, an associate professor of psychiatry and behavioral neurosciences at McMaster University in Hamilton, Ontario Canada.
Blood samples drawn before and after each slideshow were then at the University of British Columbia showed 28 participants up, as well. Motivation like fear, which can result in disorders such as anxiety as maternal drive, becomes paramount to survival. If sickness is a threat condition, animals will still get their heads on the gear shift every time now and then.

Talking Back to Your Immune System

Talking Back to Your Immune System

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Talking Back to Your Immune System

Talking Back to Your Immune System

How Mitochondria Keep Our Brains and Minds Moving

How Mitochondria Keep Our Brains and Minds Moving

Talk back to your immune system...

Leigh Smith, Emily Wissel, Jane A. Foster, Mats Lekander, and Robert Dantzer contributed to this article.

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The Cooperative Revolution Is Making Psychological Science Better

Psychological science is currently experiencing something of a revolution, and it is a cooperative one. It’s a response to the so-called “replication crisis,” a period of self-reflection that revealed problematic flexibility in data analysis, publication bias (null findings are less likely to be submitted and/or published than positive findings), and disappointingly low replicability rates — challenges that are also playing out across disciplines ranging from cancer biology to neuroscience.

But change is coming. In the past decade, the openness and frequency of communication among psychological scientists has increased sharply, allowing researchers to initiate worldwide projects involving the collaboration of dozens of researchers, and pushing academic journals and professional organizations to rapidly adopt practices to increase the rigor and transparency of published work. Thanks to the Internet, graduate students and researchers from less privileged institutions share the same platforms as their more privileged peers; information about new research, methods, and statistics are routinely discussed by scholars from all over the globe; and geographical distance is less of a barrier to collaboration than at any point in history.

In short, this is an exciting time to be in the field of psychological science. We are encouraged by the hope and passion for our science that we see in our colleagues, and we believe this cooperative revolution will push our science to become more collegial, rigorous, progressive, and inclusive.

Criticism, Cooperation, and Collaboration

Our optimism should not be confused with naivety. We acknowledge that the debates surrounding methodological reforms have been accompanied by clear cases of incivility, both in public (e.g., calling other researchers names on social media) and in private (e.g., threatening a colleague’s career over email). We believe it’s important to foster a scientific discourse that can be both strongly critical and also civil. Incivility is by no means necessary to get a critical point across, and if anything only distracts from the message. Importantly, psychological scientists are now having conversations about how to establish new norms for critical debates that occur in increasingly public spaces such as blog posts and social media.

Science benefits when critique is not made personal and not taken personally — but scientists are closely associated with their findings, and having your work criticized is undeniably hard. We all experience this — when reading critical reviews on a manuscript or grant proposal, for example. But being wrong is a basic part of being a scientist. And for science to be self-correcting, we need to embrace critique. If someone points out errors in our work, we need to take a deep breath and objectively evaluate if we erred. Paraphrasing James Heathers: Science is not about producing research, but about producing knowledge, and for that we need to be deeply critical of our own work and that of others. But embracing a spirit of strong criticism is not sufficient for good science. We need an environment of cooperation and collaboration. And, in our opinion, the past decade has been largely cooperative and positive, with the vast majority of reform-minded researchers operating in a tactful and professional manner. They are providing a valuable service to both producers and consumers of science and are driven by a heartfelt desire to improve their field and its public reputation. Here, we highlight a few examples (many of which we are involved in) of supportive communities, civil conversations, statistical innovations, collaborative teaching materials, diverse and inclusive lab cultures, large-scale research collaborations, and technological infrastructure to support it all.

Supportive Communities and Constructive Conversations

Social media and other online platforms have provided researchers with new ways to connect with other scholars, share and debate ideas, and learn from one other. Conversations occur in real time instead of unfolding in slow motion in the pages of printed journals. They can be structured in ways that encourage people from all career stages to participate rather than ways that engage only a limited number of eminent insiders.

A good example of constructive online conversation is the Facebook discussion group Psychology, a space for researchers to engage in constructive, open-minded, and nuanced conversations about psychological methods and practices. The group has thousands of members from around the world, from undergraduate students to senior professors. Discussions range from critical-yet-civil debates about scientific priorities or the strength of a given literature to specific questions about the best way to analyze a particular kind of data. The group is highly moderated by four scholars who on rare occasions step in to steer conversations away from focusing on specific individuals and toward asking broader questions about methods and practices. A Community Board of scholars from a diversity of research areas, career stages, and institution types has helped
the group develop the breadth and inclusivity of both the topics discussed and conduct as a way to clarify the norms of behavior we expect from our colleagues and to respond to people who violate these expectations.

Moving Forward: A Call to Action
Psychological science’s revolution is well underway and is gaining momentum. Though considerable progress has already been made, there is still much work to be done, and we cannot do it alone. Whether you are a student just getting your hands dirty in lab work, an early-career researcher carving out your scholarly niche, or a well-seasoned professor with decades of experience, we hope that you will join us in our pursuit of research integrity, transparency, and rigor.

Most researchers chose the profession for the same basic reasons: to gain knowledge about the world; to make a difference; to advance and improve society. These goals remain a shared feature of our work, regardless of the area of inquiry. As we move forward, we are calling on all researchers (ourselves included) to continuously improve the rigor of their work. As researchers, we owe it to the scientific community and to society to produce the best research possible. This includes making our data available, thoughtfully engaging with criticism when it arises, and admitting when mistakes have been made — behaviors that reflect the scientific ideals of verifiability, organized skepticism, and falsifiability. We all have a responsibility to identify these mistakes more quickly, to advance a cumulative science through cooperation and collaboration, and to grow as researchers and as a field.

Open and Inclusive Teaching and Training
The spirit of cooperative material sharing has extended to how we teach the next generation of scientists. Psychologists have worked together to generate excellent reading lists on methods reforms and reproducibility, which they then share freely with others to use in both graduate and undergraduate courses. Some have even taken the extra effort to conduct a cooperative step of posting complete syllabi and course materials to be amended and adopted by any instructor who finds value in bringing those materials into their classroom.

Platforms such as Twitter make space for new kinds of discussions, which — because they are so public — can have strikingly fast impacts on the culture of psychological research. One example is the question of how undergraduate students become involved in research labs, a critical type of experience for applying to graduate school in the sciences. A relatively large and diverse group of scientists has been discussing the importance of offering paid research opportunities instead of purely voluntary positions. Pro bono research work is simply not realistic for students who need summer income to pay their way through school and systematically excludes some students from getting research experience at a critical point in their careers. Anecdotally, we have noticed a promising uptick in advertisements for paid summer internships in some excellent labs in psychological science.

In a similar way, Twitter and Facebook have provided forums for discussion about codes of conduct, which have been common in software development and related fields for several years. As part of the much longer conversation in academia sexual harassment and assault in academia, professional conferences in psychology have begun to adopt these codes of conduct. This evolution is a step toward clarifying the norms of behavior we expect from our colleagues and to respond to people who violate these expectations.

New Statistical Tools and Technological Infrastructure
The cooperative revolution has also benefited from exciting statistical innovations. Scientists are designing new tools to provide straightforward solutions to some of the problems related to the replicability crisis. For instance, analyses show that we are aware of to date: a study on infants’ attention to child-directed speech (‘baby talk’) with more than 2,700 young participants. And although psychological science has often been criticized for focusing too heavily on the United States and other western countries, the recently launched Psychological Science Accelerator is a globally distributed network of psychological science laboratories (currently 210), representing 45 countries on all six populated continents, that will collect data for democratically selected studies. The network’s mission is to “accelerate the accumulation of reliable and generalizable evidence for the empirical effects underlying our theories (e.g., copy/paste errors), they can distort substantive conclusions. To facilitate the detection of such errors, free programs and apps such as GRiM, stackcheck, and p-checker have been developed. Researchers can easily use these tools to quickly screen their manuscripts for errors before they submit them to a journal.

Researchers and funders have also invested heavily in the infrastructure supporting our increasingly collaborative science, developing a suite of resources to support the unique challenges of multistate collaborations; (5) openness to criticism, by inviting and carefully considering all critical feedback.

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Researchers and funders have also invested heavily in the infrastructure supporting our increasingly collaborative science, developing a suite of resources to support the unique challenges of multistate collaborations; (5) openness to criticism, by inviting and carefully considering all critical feedback.
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Enny Das, Centre for Language Studies Faculty of Arts, Radboud University Nijmegen, The Netherlands
Stephen Fleming, Wellcome Trust Centre for Neuroimaging, University College London, United Kingdom
Susan Michie, Centre for Behaviour Change, University College London, United Kingdom

Our Minds Are Not Our Own: The Role of Guts and Germs

Alyssa N. Crittenden, Department of Anthropology, University of Nevada, Las Vegas, USA
Robert Danzer, Department of Symptom Research, Division of Internal Medicine, The University of Texas MD Anderson Cancer Center, USA
Jane A. Foster, Department of Psychiatry & Behavioural Neurosciences, McMaster University, Canada
William P. Hanage, Department of Epidemiology, Harvard University, USA
Mats Lekander, Department of Clinical Neuroscience, Karolinska Institutet, Sweden

The Consequences of the Evolution of Language on the Mind

Lera Boroditsky, Department of Cognitive Science, University of California, San Diego, USA
José Morais, Centre for Research in Cognition & Neurosciences, Université Libre de Bruxelles, Belgium
Jennie E. Pyers, Department of Psychology, Wellesley College, USA
Alexandra Rosati, Department of Psychology, University of Michigan, USA

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Human Culture: What Is It and How Does It Work?

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Henrike Moll, Department of Psychology, University of Southern California, USA
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From the Heart to the Eye: Interoception and Awareness

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Catherine Tallon-Baudry, Laboratoire de Neurosciences Cognitives, École Normale Supérieure, France

How Changing Our Bodies Changes Our Selves

Henrik Ehrsson, Department of Neuroscience, Karolinska Institutet, Sweden
Carolyn Mair, Psychology for Fashion, United Kingdom
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Studying Perception: Is It Worth It?

Ned Block, Department of Philosophy, New York University, USA
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Long Live Psychology! ... and Long-Lived Psychologists

By David G. Myers

Turning 76 years old in a week, and still loving what I do, I find myself inspired by two recent emails. One, from social psychologist Thomas Pettigrew, age 87, responded to my welcoming his latest work by attaching 14 of his recent publications. The second, from C. Nathan DeWall, pointed me to an interesting new article coauthored by developmental psychologist Walter Mischel, age 88 (who, sadly, died just hours before this essay was posted).

That got me thinking about other long-lived people who have found their enduring calling in psychological science. My late friend Charles Brewer, the longtime editor of Teaching of Psychology (who once told me he took 2 days a year off: Christmas and Easter), taught at Furman University until he was nearly 82, occupied his office until age 83, and was still authoring into his 80s.

But Charles’s longevity was exceeded by that of:
- B. F. Skinner, whom I heard address the American Psychological Association convention in 1998 at age 86, just 8 days before he died of leukemia.
- Carroll Izard, who coauthored three articles in 2017, the year of his death, at age 93.
- Jerome Bruner, who, the year before he died in 2016 at age 100, authored an essay on “The Uneasy Relation of Culture and Mind.”

And in earlier times, my historian-of-psychology friend Larry Benjamin tells me, Wilhelm Wundt taught until 85, supervised his last doctoral student at 87, and Robert Woodworth lectured at Columbia University until 89 and published his last work at 90.

So, I then wondered, who of today’s living psychological scientists, in addition to Pettigrew and Mischel, are still publishing at age 85 and beyond? Daniel Kahneman and Paul Ekman almost qualify, but at 84 are youngsters compared to those below. Here’s my preliminary short list — other nominees welcome! — with their most recent PsycINFO publication.

Gordon Bower: Age 85
(born December 30, 1932)

James McCaugh: Age 86
(born December 17, 1931)

Lila Gleitman: Age 88
(born December 10, 1931)

Roger Shepard: Age 89
(born January 30, 1929)

Jerome Kagan: Age 89
(born February 25, 1929)

Albert Bandura: Age 92
(born December 4, 1925)

Aaron Beck: Age 97
(born July 18, 1921)

Continued on Page 31
Eleanor Maccoby: Age 101
(born May 15, 1917)

And a drum roll for:

Brenda Milner: Age 100
(born July 15, 1918)

At age 100, she still, I’m told, comes in a couple times a week to the Montreal Neurological Institute, which recently celebrated her centennial (with thanks to Melvin Goodale for the photo at right).

Life is a gift that ends unpredictably. Having already exceeded my at-birth life expectancy, I am grateful for the life I have had. But as one who still loves learning and writing (and can think of nothing else I’d rather do), why not emulate these esteemed colleagues while I continue to be blessed with health, energy, and this enduring sense of calling?

*The “major early women psychologists” — Mary Calkins, Margaret Washburn, Christine Ladd-Franklin, Helen Woolley, Leta Hollingworth — all died before age 85, reported Benjamin, who added that some other psychological scientists have stayed too long in the profession without knowing “when to hang up their spikes” and make way for fresh faces in the classroom and laboratory.

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Mara-thons push runners to their limits. To prepare,
athletes run dozens of miles per week, eat carb-
rich diets, and learn to listen to their bodies,
spacing out training and recovery days to avoid running
themselves into the ground.

Similarly, cognitive psychologists have shown that skill
development works best when students engage incrementally
and repeatedly with new materials across time. Much like a
runner who prepares for a marathon by training just once a
week, students who try to pass a class by cramming a week's
worth of readings and assignments into a single night, or even
a few hours, may fall short of the finish line, says APS Past
President Morton Ann Gernsbacher, Sir Frederic C. Bartlett
Professor of Psychology at the University of Wisconsin-
Madison. That’s where Gernsbacher’s innovative series of
online classes comes in.

“I really wanted to design a course that manifested the
notion of distributed learning,” Gernsbacher said in an
interview. “I wanted assignments to be ones that students
had to process deeply.”

A 2010 meta-analysis of 50 study effects by the US De-
partment of Education found that online learners performed
modestly but consistently better than students in a traditional
classroom setting. This boost isn’t due to the medium, but
rather to online classes’ potential to capitalize on established
principles of learning, Gernsbacher explained.

In that spirit, Gernsbacher’s current online offerings —
including “Research Methods” and “Psychological Effects
of the Internet” for undergraduate students — are packed
with readings, videos, and daily assignments ranging from
writing summaries to completing review sheets and creating
multimedia term projects. While most college classes meet
once or twice a week — making massed study an attractive,
and even practical, option, Gernsbacher said — her format
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- A current mailing address, telephone number, and e-mail address for the nominee.

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When More Isn't Better: The Costs of Extreme Personalities

By C. Nathan DeWall

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement (1 = Disagree strongly, 2 = Disagree a little, 3 = Neutral, no opinion, 4 = Agree a little, 5 = Agree strongly).

Activity #1: Conscientiousness

Tends to be disorganized.  
Tends to be lazy.  
Is dependable, steady.  
Is systematic, likes to keep things in order.  
Has difficulty getting started on tasks.  
Can be somewhat careless.  
Keeps things neat and tidy.  
Is efficient, gets things done.  
Is reliable, can always be counted on.  
Leaves a mess, doesn’t clean up.  
Is persistent, works until the task is finished.  
Sometimes behaves irresponsibly.

Activity #2: Extraversion

Is outgoing, sociable.  
Has an assertive personality.  
Rarely feels excited or eager.  
Tends to be quiet.  
Is dominant, acts as a leader.  
Is less active than other people.  
Is sometimes shy, introverted.  
Finds it hard to influence people.  
Is full of energy.  
Is talkative.  
Prefers to have others take charge.  
Shows a lot of enthusiasm.

After students respond to the conscientiousness questions, have them score their responses. First, they’ll need to reverse-score the following questions: 3, 4, 5, 8, 9, 10. For an easy shortcut, students can subtract their responses from the number 6 (e.g., a response of 2 would be reverse-scored to 6 – 2 = 4). Next, ask students to average all of their responses to compute their overall conscientiousness score (responses / 12). Finally, share with students the average student conscientiousness score (3.44; men: 3.34, women: 3.54).

With a partner, students can discuss their conscientiousness scores. Were they higher, lower, or about the same as the average student score? How might extremely high levels of conscientiousness cause people problems in their work lives or personal relationships? What about how extremely low levels of conscientiousness might predict difficulties at work and at home? In what work and personal situations might moderate amounts of conscientiousness pay off?

Instructors can then review Carter and colleagues’ arguments regarding the potential downsides of extremely high and low levels of agreeableness. At extremely high levels of conscientiousness, people can become preoccupied with orderliness and making sure that they have complete control over their minds and social environments (Lynam & Widiger, 2001). Highly conscientious people can also struggle when they receive negative job feedback (Cacciotti, Klein, & Sejts, 2018). Extremely low levels of conscientiousness can also plague work and health outcomes, such as failing to meet deadlines or giving adequate exercise (Barrick & Mount, 1991; Bogg & Roberts, 2004). Moderate conscientiousness and self-efficacy, however, bode well for school performance and emotional well-being (Carter et al., 2016, 2018).

Similar to Activity #1, ask students to score their responses to the extraversion items. They will need to reverse-score the following questions: 3, 4, 6, 7, 8, 11. Students can use the same reverse-score shortcut by subtracting their responses from the number 6 (e.g., a response of 4 would be reverse-scored to 6 – 4 = 2). To compute their overall extraversion score, students will average their responses (responses / 12). Finally, let students compare their score to an average student’s extraversion score (3.25; men: 3.20, women: 3.31).

Students can again discuss their scores with a partner and brainstorm the boons and bane of extreme extraversion—how they known people with extremely high or low extraversion? What benefits and costs did those people experience?

Carter and colleagues (2018) describe several findings that question the upsides of extremely high levels of extraversion. Taken to extremes, gregariousness can border on an obsessive need for attention and sexual promiscuity (Wilt & Revelle, 2017). The fearless dominance/boldness component of extraversion — what might get you into the boardroom or the Oval Office — is also a feature of psychopathy (Lilienfeld et al., 2012; Patrick, Krueger, & Fowles, 2009). At extremely low levels of extraversion, people can struggle with anxiety and depression (Jylhä & Isometsä, 2006; Spinhova, 2014). Who tends to show good sales performance, prosocial behavior at work, and safe behavior? People with moderate levels of extraversion (Grant, 2013; Williamson & Carter, 2016; Yuen et al., 2018).

Extreme personalities make headlines, but that doesn’t mean having one will always improve your work and life. Sometimes moderation is the way to go.
The Gaps Among Us: Understanding and Assessing Inequality

By David G. Myers


Consider three facts about today’s income inequality:

1. Inequality has sharply increased. William Arsenio (2018) found that average income inequality in the United States increased from 0.20 in 2000 to 0.32 in 2013. Arsenio notes that, “The new inequality research is lifting the yachts faster than the dinghies — especially in the United States (see Figure 1).”

2. Unequal places tend to be unhappy places. Countries and states with greater inequality tend also to have more unhealthy, social problems, dissatisfaction with life, and mental disorders (Burkhauer, De Neve, & Poudthavee, 2016; Payne, 2017; Wilkinson & Pickett, 2017a,b). Where there is less inequality, humans more often flourish.

3. Inequality is inevitable (attributable to variations in decision and effort), and that free-market incentives that inspire some to attain wealth also promote innovation and economic growth. How might society balance the benefits of free-market incentives with exacerbating the social costs of inequality?

As a standout example of the new inequality research, consider surveys by Michael Norton, William Arsenio, and others of how much inequality people perceive and how much inequality they would ideally prefer.

The survey questions asked of adults and adolescents in the United States and elsewhere could be simplified for your students:

1. Make a guess: In your country, what percent of the wealth is owned by the top 20%?

2. “Ideally, what percent of the wealth should be owned by the top 20%?”

Arsenio (2018; and Norton & Aronley, 2011) report that, across variations in question wording, people recognize that inequality exists. In the United States, for example, adolescents have estimated that the top 20% own 48% of the wealth, while adults have guessed 59%. But both greatly underestimate the actual wealth inequality (with 84% owned by the top 20% and 0.1% by the bottom 20% — an 840:1 disparity that is 42 times greater than adults guessed).

A second finding, notes Arsenio, is that (my italics) “people prefer a more egalitarian wealth distribution than the one they believe exists.”

Moreover — and more surprisingly — Republicans (or more conservative or as more Democrat/liberal) prefer a more unequal distribution, an increased minimum wage, and inequality-reducing tax policies would entail psychological and social benefits. (Think Sweden.)

Our ideal resource distributions are conservative, that inequality is inevitable (attributable to variations in decision and effort), and that free-market incentives that inspire some to attain wealth also promote innovation and economic growth. How might society balance the benefits of free-market incentives with exacerbating the social costs of inequality?

There is no evidence that inequality is a cause of mental disorders (Burkhauer, De Neve, & Poudthavee, 2016; Payne, 2017; Wilkinson & Pickett, 2017a,b). Where there is less inequality, humans more often flourish.

Or would you prefer a more egalitarian wealth distribution than the one they believe exists?

A final note: Might teaching about the realities and perceptions of inequality expose us teachers to accusations of “liberal bias”? If so, there are two possible responses:

The psychology of inequality does not dictate economic policy.

One could argue, as do progressives, that income redistribution, an increased minimum wage, and inequality-reducing tax policies would entail psychological and social benefits. (Think Sweden.)

Or you could argue that conservatives, that inequality is inevitable (attributable to variations in decision and effort), and that free-market incentives that inspire some to attain wealth also promote innovation and economic growth. How might society balance the benefits of free-market incentives with exacerbating the social costs of inequality?

As a science, psychology aims not to advance liberal or conservative thinking (or the pervasiveness of prejudice) and sometimes support conservative thinking (about, say, the benefits of marriage and co-parenting or the effects of teen exposure to pornography). As a science, psychology aims not to advance liberal or conservative thinking per se, but to let evidence inform our thinking. And for us teachers of psychology that, no matter our political identities, is perhaps the biggest lesson of all.

References


We’re putting more and more technology in the car that just doesn’t move with driving. We’re expecting to see more problems associated with distracted driving as more stuff is at the fingertips of the driver to distract them.”

APS Fellow David Strayer, University of Utah, on a study he led for the AAA Foundation for Traffic Safety showing that vehicle infotainment features take drivers’ attention off the road for too long to be safe.

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ASSOCIATION FOR PSYCHOLOGICAL SCIENCE
Getting Involved On and Off Campus

By Iiona D. Scully

For many people, the first few years of graduate school are pretty much alike: spending hours reading journal articles, taking classes, formulating research questions, doing the research, and writing papers. Aside from the occasional required self-care (e.g., sleeping, eating, bathing), graduate school becomes all about the academics. Sure, during first-year orientation I learned about the events I could be attending, the graduate student government, and the community, but those concerns were easy to ignore while I focused intently on research. At the time, I didn’t understand the importance of the idea that, even in graduate school, it was important to have and maintain a work-life balance.

My involvement started small; I began as a Campus Representative for the APS Student Caucus (APSSC). Soon after, I gained experience in other leadership positions (e.g., Representative to the Graduate Committee) at the departmental and college levels. At first glance, these experiences seemed only to increase my workload. Eventually, however, they also made graduate school more enjoyable. I had more people to talk to and a variety of things to occupy my mind. In my fourth and fifth years I raised the bar by joining the Lehigh Graduate Student Senate and becoming the Membership and Volunteers officer for APSSC. So why did I do it? Why is it important to get involved outside of academia as a graduate student?

Networking

One of the more obvious benefits of getting involved in organizations and positions outside of your research is the opportunity to network. Joining organizations such as APS can help you connect with other professional psychological scientists as well as with other students in fields adjacent to yours. Student government also offers excellent networking opportunities. You get to work with other graduate students, faculty, and university leadership across your campus. This gives you opportunities to learn about other fields and create connections for future job or internship opportunities.

Working as a Team

Depending on the size of your research lab, you may not get the chance to work as part of a team. Collaborating in student government or another organization helps you to think differently. Solving a problem from a team-based perspective requires unique skills. Experience in group projects is an essential skill for many jobs, especially those outside of academia.

Honing Strengths You Already Have

Getting involved in extracurricular activities can help you better the skills you will need during and after graduate school. Time management is among the most important. If you do not come up with a system to manage your time effectively, it will be almost impossible to truly get involved with experiences outside of your academic studies. I use reminders on my phone to keep me on track. Other strategies may include setting aside a certain amount of time for a task or working in groups to ensure accountability. Additionally, being a student leader helps with organization skills, as you often need to switch gears between graduate school and leadership activities.

Experience With Diversity

Joining an organization or club gives you many opportunities to engage with diverse groups of people. Interacting with such groups helps to broaden your knowledge and understanding of others and allows you to foster new ideas and perspectives. It gives you experiences that you may otherwise overlook. Take the chance to learn about and celebrate diversity.

A Chance to Make a Difference

One of the greatest rewards of getting involved with activities outside of your graduate studies is the ability to make a difference in your community. In student government, you will get the chance to plan events and create spaces for creative thinking and networking. You can be a force of change for your graduate student community by helping to advocate for and protect your constituency, improving graduate student life and policies affecting graduate students.

I also recommend being active at the national or international level. Joining organizations such as APS can foster relationships between other students and the organization. You can help create opportunities, such as new funding sources, for students. In addition, it is useful to get involved with organizations such as the National Association of Graduate and Professional Students, which effects changes for graduate students at the national level. This organization fosters communication between graduate students and their congressional representatives and senators. It is also engaged in legislation that affects graduate students.

Have Some Fun!

Undertaking projects outside of your graduate studies is fun! Not only do you make new friends, but you get the chance to relax. Give yourself something to do to get away from research/teaching/practicums. Help plan events, but also attend those events. Get involved in a group that allows you to travel. Get involved with something that really matters to you. You’ll enjoy your graduate school years more and have a better quality of life.

How Can You Get Involved?

The Association for Psychological Science Student Caucus

- Run for an Executive Board position (bit.ly/2OuVKKR)

Other Ways to Get Involved

- Get involved in your student government
- Join a university, college, or department committee
- Join a community service organization
- Join or create a graduate student club
- Join another organization that offers services and leadership opportunities to graduate students. For example:
  1. The American Psychological Association of Graduate Students
  2. The National Association for Graduate and Professional Students
  3. The National Association of School Psychologists
  4. The National Education Association
  5. The Association of Women in Science
  6. The Association for Support of Graduate Students
  7. The Council of Graduate Schools

www.psychologicalscience.org/motr

MINDS ON THE ROAD
AN APS BLOG ON THE SCIENCE OF WHAT’S DRIVING BEHAVIOR

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Iiona D. Scully is the 2018–2019 Membership and Volunteers Officer for the APS Student Caucus. She is a fifth-year doctoral candidate in the Psychology program at Lehigh University, where her research examines the dynamic nature of human memory, focusing on mechanisms of long-term memory change.

Elizabeth Dunn, University of British Columbia, Canada, NPR, November 5, 2018: Can’t Stop Worrying? Try Tetris To Ease Your Mind.


Douglas A. Gentile, Iowa State University, Scientific American, October 2, 2018: Yes, Violent Video Games Trigger Aggression, but Debate Lingers.

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Peter Gray, Boston College, whar, October 30, 2018: The Unschooling Movement: Letting Children Lead Their Learning.

Jonathan Haidt, New York University, Scientific American, October 17, 2018: Can You Quantify Awe?

Julianne Holt-Lunstad, Brigham Young University, The Atlantic, October 17, 2018: To Prevent Loneliness, Start in the Classroom.

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Richard McNally, Harvard University, NPR, September 18, 2018: Harvard Psychology Professor Discusses How Trauma Affects Memory.


James Pennebaker, University of Texas at Austin, The New York Times, October 25, 2018: What’s All That About Journaling!

Psynapsis: "The Atlantic" (October 17, 2018)

Loneliness begins in childhood and can result in a variety of negative health consequences. APS Fellow Julianne Holt-Lunstad calls for an in-school “social education” program — similar to those that promote health or sex education — that could help kids form and maintain friendships.

Psynapsis: "The New York Times" (October 22, 2018)


Laura Carstensen, Stanford University, The Washington Post, November 1, 2018: Why We Often Remember the Bad Better Than the Good.

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Psynapsis: "The New York Times" (October 22, 2018)
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PsycLearn: Research Methods coming in 2019!

PsycLearn is APA’s adaptive digital learning resource that leverages interactive technology to help psychology faculty maximize class time and enhance student learning outcomes.

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PsycLearn: Research Methods coming in 2019!

Draw students in with real-world examples of course concepts to help them learn about the methodologies supporting social science research and recognize the role of psychological science in society.
to join the top tier of national public research universities. The university is committed to recruiting and retaining top students and fac-
culty, expanding educational and research opportunities through interdisciplinary partnerships, and creating an academic health center for Southern Nevada that includes the launch of a new UNLV School of Medicine. UNLV is seeking applications from promising candidates to be supported by the National Science Foundation and other federal agencies as well as foundations including the American Cancer Society, the American Institute of Food and Agriculture (NSHE) MUST use the “Find Jobs” process within Workday to find and apply for jobs at UNLV and other NSHE Institutions. Once you log into Workday, type “Find Jobs” in the search box which will navigate to the internal job posting site. Locate this specific job posting by typing the requisition number, “R0112274” in the search box. If you complete an application outside of the internal application process, you will not be able to reaply as an internal applicant which may delay your application. UNLV is an Equal Opportunity / Affirmative Action employer and employer committed to achieving excellence through diversity. All qualified applicants will receive consideration for employment without regard to, among other things, race, color, religion, sex, age, creed, national origin, sexual orientation, gender identity, genetic information, gender expression, or any other factor protected by anti-discrimination laws. The University of Nevada, Las Vegas employs only United States citizens and non-
citizens lawfully authorized to work in the United States. Women, under-represented groups, individuals with disabilities, and veterans are encouraged to apply. 

**NEW YORK**

**Utica College**

**Assistant Professor of Psychology**

The Department of Psychology at Utica College invites applications for two tenure-track positions in Psychology beginning August 1, 2019. One position is in Clinical/Counseling Psychology and one position is in Developmental Psychology. A Ph.D. or Psy.D. in Clinical/Counseling Psychology is preferred to teach clinical courses. A Ph.D. in Developmental Psychology is preferred to teach developmental courses. The successful candidate will demonstrate support for diversity, equity and inclusiveness as well as participate in maintaining a respectful, positive work environment. The UNLV School of Allied Health Sciences is seeking two full-time tenure track faculty at the Assistant or Associate Professor ranks for the Health Disparities Research Initiative. The initiative spans several colleges and schools at the University and is designed to foster interdisciplinary research and collaboration in health disparities research. The faculty members will conduct a program of research related to health disparities. The university-wide health disparities research initiative will increase the impact of research on health disparities at local, state, and national levels, and strive to address the gaps in health care and the needs of communities. The position is primarily devoted to research, the candidate must demonstrate excellent teaching skills. Salary competitive with those at similarly situated programs in nutrition, exercise, rehabilitation, wellness and kinesiology and thus, faculty who have research interests in these specific areas would be especially welcome. Those prospective faculty members will facilitate and conduct university-wide research on health disparities through interdisciplinary research. She will disseminate research outcomes in peer reviewed high impact journals and at conferences, seminars, and symposia. The successful candidates will need to have a demonstrated track record or significant potential for securing external grant awards from such agencies as the National Institutes of Health, the Center for Disease Control and Prevention, the National Science Foundation and other federal agencies as well as foundations including the American Cancer Society, the American Heart Association, etc. The successful candidate is expected to: Have earned a PhD or doctoral degree in the health sciences or behavioral sciences related to any field of psychology or medicine. Possess a strong research background in health disparities research. A record of utilizing creative leadership and promoting interdisciplinary research collaboration. Although the position is primarily devoted to research, the candidate must demonstrate excellent teaching skills. Salary competitive with those at similarly situated institutions. Position is contingent upon funding. Submit a letter of interest, a detailed resume listing qualifications and experience, and the names, addresses, and telephone numbers of at least three professional references who may be contacted. Applicants should fully describe their qualifications and experience, with specific reference to each of the minimum and preferred qualifications because this is the information on which the initial review of materials will be based. Although this position will remain open until filled, review of candidates’ materials will begin immediately. Materials should be addressed to Dr. Janet Dufek, Search Committee Chair, and are to be submitted to: Assistant Professor Application at http://hrsearch.unlv.edu/. For assistance with UNLV’s on-line applicant portal, contact UNLV Employment Services at (702) 895-3504 or applicant.inquiries@unlv.edu. UNLV employees or employees within the Nevada System of Higher Education (NSHE) MUST use the “Find Jobs” process within Workday to find and apply for jobs at UNLV and other NSHE Institutions. Once you log into Workday, type “Find Jobs” in the search box which will navigate to the internal job posting site. Locate this specific job posting by typing the requisition number, “R0112274” in the search box. If you complete an application outside of the internal application process, you will not be able to reaply as an internal applicant which may delay your application. UNLV is an Equal Opportunity / Affirmative Action employer and employer committed to achieving excellence through diversity. All qualified applicants will receive consideration for employment without regard to, among other things, race, color, religion, sex, age, creed, national origin, sexual orientation, gender identity, genetic information, gender expression, or any other factor protected by anti-discrimination laws. The University of Nevada, Las Vegas employs only United States citizens and non-
citizens lawfully authorized to work in the United States. Women, under-represented groups, individuals with disabilities, and veterans are encouraged to apply.
NIH Funding for High-Priority Behavioral and Social Research Networks

The National Institute on Aging (NIA) has released two new funding announcements encouraging submission of proposals to develop research networks dedicated to behavioral research connected to aging. Alzheimer’s disease, and Alzheimer’s disease related dementias. Applications are limited to scientists wishing to develop networks in high-priority areas including midlife reversibility of biobehavioral risk associated with early life adversity, stress measurement, reproducibility in the social and behavioral sciences, life course health disparities at older ages, genomics and social sciences, integrating animal models to inform behavioral research on aging, rural aging, Alzheimer’s disease care and services research, and coordination of international studies conducting the harmonized cognitive assessment protocol.

Successful applicants will receive up to 5 years of funding and a budget of up to $250,000 per year. Interested applicants should submit a letter of intent by January 1, 2019 and applications are due by February 1, 2019.

NSF Funding For Integrative Research on Behavioral Science and Cybersecurity

The National Science Foundation (NSF) is soliciting proposals for submissions for the Secure and Trustworthy Cyberspace (SaTC) program, which addresses privacy and security challenges through integrative research, seeking new methods for designing and operating cybersecurity systems, and educating the public about cybersecurity.

SaTC will fund investigators via the Early-Concept Grants for Exploratory Research (EAGER) award, which grants recipients up to $300,000 for 2 years. Current scientific and practical applications of cybersecurity involve behavioral science elements, so EAGER proposals require collaboration between principal investigators in the fields supported by the NSF Social, Behavioral, and Economic Sciences (SBE) directorate, the National Science Foundation (NSF) Computer and Information Science and Engineering (CISE) directorate, and the NSF Cyber-Enabled Discovery and Innovation (CEDI) directorate.

NSF will fund up to 10 EAGER awards to researchers doing CISE or SBE-type work who have not previously received a SaTC award. The proposed topic must be interdisciplinary, in early stages of exploration, and new to the SaTC program. Suggested topics, which include themes in behavioral science and usability and human interaction, can be found in a recent SaTC program solicitation (NSF 18-572), but other relevant topics are welcomed by NSF.

Prior to submitting a proposal, scientists are asked to send an email and one-page summary of the project to the program directors, who will review the described research and inform applicants if they are encouraged to apply. Approved proposals should describe the contributions of the SBE and CISE disciplines to the topic and the intellectual benefits of the research for the SaTC community. Ideal proposals will support untested but transformative new approaches, applications of expertise, or use of novel integrative perspectives.

Proposals are due December 12, 2018. For details and instructions for submissions, visit bit.ly/2Wuc4H.

Russell Sage Foundation 2019 Summer Institutes

The Russell Sage Foundation is sponsoring summer institutes in biological approaches to social sciences, social-sciences genomics, and computational social science. The institutes are targeted at advanced PhD students and early career faculty researchers. Most participant costs, including housing, meals, and travel will be covered.

The three institutes include the Summer Institute in Biological Approaches to the Social Sciences (Application Deadline: January 15, 2019), the Summer Institute in Social Science Genomics (Application Deadline: February 11, 2019), and the Summer Institute in Computational Social Science (Application Deadline: February 20, 2019). For more information, visit www.russellsage.org/summer-institutes. For questions, contact Chris Bul at rscf@russellsage.org.

Meetings

41st Annual National Institute on the Teaching of Psychology
January 3–5, 2019
St. Pete Beach, Florida, USA
nitop.org

3rd International Convention of Psychological Science
7–9 March 2019
Paris, France
icps2019.org

31st APS Annual Convention
May 23–26, 2019
Washington, DC
psychologicalscience.org/convention

13th Biennial SARMAC Meeting
June 6–9, 2019
Brewster, Cape Cod, Massachusetts, USA
www.sarmac.org

Conference on Children and Youth 2019
July 4–5, 2019
Colombo, Sri Lanka
youthstudies.co

How to Make the Most of Meetings

When deciding whether to attend a meeting, ask yourself why you would want to attend. Do you wish to meet other researchers who are working in your field? Do you wish to develop networks in high-priority areas, such as psychology science and cybersecurity? Do you wish to develop networks in high-priority areas, such as psychology science and cybersecurity?

Meetings should involve problem solving, decision making, or substantive discussion. They should not be held to share routine or non-urgent information. Circulate an agenda: Having in an agenda meets the modeling priorities clear to all stakeholders and allows attendees to prepare beforehand. Invite the right people: Leaders should ask what the goal of the meeting is and whose expertise can help the team get there.

During the Meeting

• Encourage contribution: Findings suggest that high-level performers use meetings to set goals, facilitate group understanding of work problems, and seek feedback.
• Make space for humor: Humor and laughter can stimulate positive meeting behaviors, encouraging participation and creative problem solving, research shows. These positive meeting behaviors predict team performance concurrently and two years later.
• Redirect complaining: Attendees should be aware that complaining can quickly lead to feelings of futility and hopelessness, and leaders should quell complaining as quickly as they can.
• Keep discussions focused: Leaders also make sure the purpose of the meeting and the agenda are followed. Attendees should be ready to identify dysfunctional behaviors and intervene to refocus the meeting.

After the Meeting

• Share minutes: Sending meeting minutes serves as a reminder of the decisions that were made, a plan of action for next steps, and an outline of designated roles and responsibilities. This step also loops in people who weren’t able to attend the meeting but need the information.
• Seek feedback: Feedback can inform the structure and content of future meetings. In particular, leaders can identify meeting problems to increase attendee satisfaction.
• Look ahead: To build on progress made during the meeting, stakeholders should think about future actions, follow-through, and immediate and long-term outcomes of the meeting.

Reference

DOI: 10.1177/0963721418776307

Psychological Science.
Time-Sensitive Material