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Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON Vol. 45 No. 1 | January/February 2021

REMEMBERING RANDI 1928–2020

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REMEMBERING RANDI

FEATURES

COLUMNS

Committee for Skeptical Inquiry
"… promotes scientific inquiry, critical investigation, and the use of reason in examining controversial and extraordinary claims."

[FROM THE EDITOR

Honoring Randi

We had the contents for this issue all planned, edited, and in proofs when the news came of the death of our dear friend and colleague James "The Amazing" Randi. His has been the strongest single voice of skepticism worldwide for a half century. Although just five days from deadline, we quickly changed plans. We asked some of Randi's closest friends and associates in the skeptic and magic communities to share their memories. It is a measure of their love for Randi that we received virtually all of them by our deadline. I offer my own stories on Randi's amazing life and legacy in the lead article.

As I write, we are still sifting through collections of great photos of Randi. Tyler Measom, creator of *An Honest Liar*, the fine feature-length documentary film about Randi, generously gave us access to that project's still photos. Deyvi Peña, Randi's husband (an artist and a wonderful person himself), kindly allowed us to use some of his own portraits of Randi. At this point, we still have no idea how much space our special Remembering Randi section will take up in the magazine or exactly how it is going to look, but we are committed to publishing an issue that does Randi proud.

From the seventeen tributes published here, you will learn much about Randi you didn't know. You'll hear about Randi's phenomenal impact on skepticism and about his deep personal connections with so many people. You'll hear about his kindness. You'll learn from Penn & Teller how Randi proved, among other things, that you can be skeptical without being cynical and that being a skeptic is great fun. You'll hear from Massimo Polidoro (who apprenticed with Randi) and Jamy Ian Swiss on how Randi mentored them; from Jim Alcock and Barry Karr on some of our extraordinary experiences traveling with Randi; from Harriet Hall on how Randi was like Harry Potter's Dumbledore in so many uncanny ways … but better; from Chip Denman on helping start up Randi's foundation; from Amardeo Sarma on how Randi's help was so critical in starting his skeptic group in Germany and other European skeptic groups; from Bill Nye on how at a national science teachers' conference Randi proceeded to steal the show—and in fact steal all sorts of things but then give them all back. And so on. It is sad to have to say goodbye to such a beloved and impactful figure. But we must, and we do.

Randi wasn't the only noted skeptic we lost in the past few months. Psychology professor Scott Lilienfeld (page 10) was only fifty-nine; he was a longtime member of our Executive Council and an effective force for skepticism toward dubious claims in clinical and pop psychology. He was a great friend to the Skeptical Inquirer and remained active to the end. At the time of his death, his typically thoughtful article touting the merits of intellectual humility was our cover article.

* * *

The sun also rises. We are proud to announce in this issue the election of ten new fellows of the Committee for Skeptical Inquiry. Our congratulations to Jann Johnson Bellamy, Kenny Biddle, Timothy Caulfield, William M. London, Matthew C. Nisbet, Natalia Pasternak, James Underdown, Joseph Uscinski, Bertha Vazquez, and Mick West. They represent a new and vibrant generation of skeptics who are carrying on all the traditions of advancing science and reason.

—Kendrick Frazier

Skeptical Inquirer™
THE MAGAZINE FOR SCIENCE AND REASON

Cover image courtesy of *An Honest Liar*

Committee for Skeptical Inquiry Names Ten New Fellows for Outstanding Contributions to Science and Skepticism

The Committee for Skeptical Inquiry has elected ten new fellows for their distinguished contributions to science and skepticism.

They include a political scientist who studies conspiracy theories; a microbiologist who heads a science advocacy group in Brazil; a communications researcher who studies how to present the science about climate change and other contentious issues; a health law professor, a public health professor, and an attorney, all three of whom critique health fads and unproven medical claims; a prominent science teacher who shows others how to teach evolution; and three noted investigators of extraordinary popular claims.

CSI's mission is to promote scientific inquiry, critical investigation, and the use of reason in examining controversial and extraordinary claims. Fellows are elected for their distinguished contributions to science and skepticism as well as their ability to provide practical advice and expertise on various issues and projects deemed important to the work of the Committee.

Election as a fellow is based upon the following criteria, approved by the CSI Executive Council:

1. Outstanding contribution to a scientific discipline, preferably, though not restricted to, a field related to the skeptical movement;
2. Outstanding contribution to the communication of science and/or critical thinking; or
3. Outstanding contribution to the skeptical movement.

Fellows of CSI serve as ambassadors of science and skepticism and may be consulted on issues related to their area of expertise by the media or by the Committee. They may be asked to support statements issued by CSI and contribute commentary or articles to CSI outlets.

Founding fellows of CSI include noted scientists, academics, and science writers such as Carl Sagan, Isaac Asimov, Martin Gardner, James Randi, Paul Kurtz, Ray Hyman, Philip J. Klass, Sidney Hook, and others. Current fellows include Richard Dawkins, E.O. Wilson, Neil deGrasse Tyson, Elizabeth Loftus, Bill Nye, Susan Blackmore, Steven Pinker, Eugenie Scott, Steven Novella, and Susan Haack. A list of CSI fellows is published in every issue of Skeptical Inquirer magazine and is on our website at https://skepticalinquirer.org/fellows-and-staff/.

Election to the position of fellow is a lifetime appointment. However, if in the opinion of the CSI Executive Council an individual's behavior or scholarship renders that person unable to continue to qualify for the position of fellow under the criteria listed or to effectively fulfill the role of ambassador of science and skepticism, CSI may choose to remove them from the list of fellows.

The Committee congratulates the ten new fellows for their commitments to science, rational inquiry, and public education.

The new fellows are, with capsule bios:

Courtesy of: sciencebasedmedicine.org

Jann Johnson Bellamy, attorney, writer for *Science-Based Medicine*, Tallahassee, Florida

Bellamy, a Florida attorney, does the bulk of her advocacy writing for the *Science-Based Medicine* blog, where she tracks state and federal bills that would allow pseudoscience in health care. She is one of the founders, and served on the board of, the Society for Science-Based Medicine (SfSBM), dedicated to providing accurate information about complementary and alternative medicine and advocating for state and federal laws that incorporate a science-based standard of care, a task that has since been assumed by the Center for Inquiry.

Kenny Biddle, investigator, writer, podcaster, public speaker, Philadelphia, Pennsylvania

Biddle is a science enthusiast who investigates claims of paranormal experiences, the equipment—including video—that people use to search for strange things, and the evidence presented for ghosts, UFOs, and cryptids. He promotes science, critical thinking, and skepticism through his blog *I Am Kenny Biddle* and YouTube channel. He frequently hosts workshops on how to deconstruct paranormal photography and solving mysteries at both science- and paranormal-themed events. He hosts the live Q&A podcast *The Skeptical Help Bar*, which promotes open discussion between people of different beliefs. He writes the "A Closer Look" column on skepticalinquirer.org.

Courtesy of: Karl Withakay

Timothy Caulfield, law professor, health expert, critic of unproven health claims, University of Alberta, Canada

Caulfield is Canada Research Chair in Health Law & Policy and professor in the Faculty of Law and School of Public Health as well as research director of the Health Law Institute, all at the University of Alberta. He is author of *Is Gwyneth Paltrow Wrong about Everything? How the Famous Sell Us Elixirs of Health, Beauty, and Happiness*, which has recently been published in a new, updated edition titled *The Science of Celebrity … or, Is Gwyneth Paltrow Wrong about Everything?* An earlier book was *Cure for Everything: Untangling Twisted Messages about Health, Fitness, and Happiness*. His *A Users Guide to Cheating Death* (available on Netflix), a series of one-hour documentary episodes he hosts challenging mass-marketed health trends, received the award for Non-Fiction: Science & Technology at the 2019 RealScreen Summit Awards.

Courtesy of: Susan Gerbic

William M. London, professor of public health, California State, Los Angeles

London, whose doctorate is in health education, teaches and writes about the promotion of health-related misinformation, sensationalism, superstition, pseudoscience, fraud, and quackery. He is the "Consumer Health" columnist for Skeptical Inquirer online, the editor of Quackwatch's e-newsletter *Consumer Health Digest*, and cohost of the Credential Watch website (a Quackwatch affiliate). He was cofounder and first president of the Ohio Council Against Health Fraud and later served as president of the National Council Against Health Fraud. Until his election as fellow, he was a scientific and technical consultant to the Committee for Skeptical Inquiry. This past year, he has spearheaded the Center for Inquiry's online Coronavirus Resource Center and "Dubious COVID-19 Treatments and Preventives" webpage.

Matthew C. Nisbet, communication professor and researcher, Northeastern University

Nisbet is professor of communication, public policy, and urban affairs at Northeastern University in Boston and a regular columnist at *Issues in Science and Technology* magazine. He is a leading researcher in the international fields of science communication and environmental politics. He was editor-in-chief of the three-volume *The Oxford Encyclopedia of Climate Change Communication*, which was a finalist for the American Publishers' 2019 PROSE Awards in the reference/science category, and is past editor-in-chief of the journal *Environmental Communication*. Nisbet's "The Science of Science Communication" column has appeared regularly in the Skeptical Inquirer since 2016. Starting with the May/June 2020 issue, he changed its name to "The Examined Life," "providing a skeptical dose of anti-self-help advice."

Courtesy of: Paulo Vitae

Natalia Pasternak, microbiologist, research scientist, president of Brazil's skeptics group

Pasternak is a microbiologist with a PhD from the University of São Paulo, Brazil, where she studied the molecular genetics of bacteria. In 2018, she became first president of the *Instituto Questão de Ciência* (IQC; Question of Science Institute), defending the use of scientific evidence in public policies. She even invested her own money in forming the group. She has since been involved in many activities related to the promotion of science, becoming a dynamic and passionate advocate for science and reason in Brazil and taking a leadership role in the world skeptical movement. With mixed messages on coronavirus coming from Brazil's government and health officials, Pasternak has become a highly visible proponent of science and rationality in that country, including frequent appearances on television and writing a weekly science column in a Rio de Janeiro newspaper. She and Carlos Orsi wrote "Believing the Science Is Not Understanding the Science: Brazilian Surveys" in the March/April 2020 Skeptical Inquirer.

James Underdown, writer, investigator, founder of the Center for Inquiry Investigations Group

Underdown is founder and chair of the Center for Inquiry Investigations Group (CFIIG), which investigates fringe science, paranormal, and extraordinary claims from a rational, scientific viewpoint. A recent notable investigation field-tested flat-earth claims. The CFIIG offers $250,000 to anyone who can prove paranormal or supernatural ability under controlled test conditions. Underdown is also the longtime executive director of the Center for Inquiry West in Los Angeles, where he promotes not just science-based skepticism but also science, reason, freedom of inquiry, and secular values. He is one of the cohosts of the Center for Inquiry's flagship podcast, *Point of Inquiry*, and writes the *Ask the Atheist* blog on CFI's website. He also runs CFI West's Carl Sagan & Ann Druyan Theater. In addition to his skeptic credentials, the multitalented Underdown is a writer, lead singer of a rock group, a comedic actor and entertainer, and a frequent host at CFI and CSI events.

Joseph Uscinski, political scientist specializing in conspiracy theories, University of Miami

Uscinski is associate professor of political science at the University of Miami, studying public opinion and mass media with a focus on conspiracy theories and misinformation. He is coauthor of *American Conspiracy Theories* and editor of *Conspiracy Theories and the People Who Believe Them* (both from Oxford University Press). His most recent book is *Conspiracy Theories: A Primer* (2020). He writes newspaper op-ed articles and makes frequent media appearances discussing popular and contemporary conspiracy theories, COVID-19 conspiracy theories, QAnon, and fake news. In Miami in 2015, he organized one of the first international conferences on conspiracy theory research, drawing scholars from ten countries. He spoke at CSICon 2018 and has published two Skeptical Inquirer articles on how to think about conspiracy theories.

Bertha Vazquez, science teacher, director of the Teacher Institute for Evolutionary Science

Vazquez has been a science teacher in the Miami-Dade County Public Schools since 1991. Working with Richard Dawkins, she has been director of the Teacher Institute for Evolutionary Science (TIES), a project of the Richard Dawkins Foundation for Reason & Science, now an arm of the Center for Inquiry. Since its inception in April 2015, TIES has conducted over 200 innovative workshops, in person and online, for school teachers in every state, providing science teachers at every grade level with the content knowledge and resources they need to effectively teach evolution and answer its critics. Vazquez's vision, energy, and leadership has been instrumental to its success. Thanks to this amazing project, Vazquez was the 2017 recipient of the National Association of Biology Teachers Evolution Education Award.

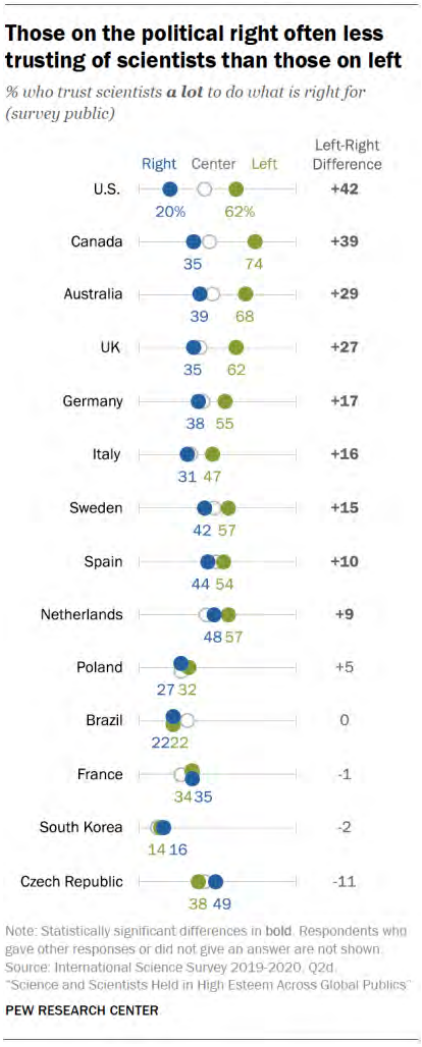
Courtesy of: Mick West

Mick West, writer, podcaster, investigator, and debunker

West, a science writer and skeptical investigator (and one-time video game programmer), is the creator of the popular website Metabunk, which skeptically examines conspiracy theories, pseudoscience, UFOs, and the paranormal. His 2018 book *Escaping the Rabbit Hole: How to Debunk Conspiracy Theories Using Facts, Logic, and Respect* examined four of the most popular false conspiracy theories—chemtrails, 9/11 controlled demolition, false flags, and flat earth—using his preferred debunking technique of clear communication based on respect, honestly, openness, and patience. In 2019, he started a podcast, *Tales from the Rabbit Hole*, to explore these themes via long-form interviews. Being a one-time believer when growing up in a small town in England, West applies that experience and sensitivity to his investigations, interactions, and writings. He now lives in Sacramento, California.

In Science We Trust? Twenty-Country Pew Survey Shows Trust in Scientists—with Major Caveats

Glenn Branch



"Science and Scientists Held in High Esteem Across Global Publics" was the headline of a September 29, 2020, news release announcing the results of a new multinational survey from the Pew Research Center. The survey examined public opinion about science and its place in society as well as several specific science-related issues. Represented in the survey were twenty countries: Australia, Brazil, Canada, the Czech Republic, France, Germany, India, Italy, Japan, Malaysia, the Netherlands, Poland, Russia, Singapore, South Korea, Spain, Sweden, Taiwan, the United Kingdom, and the United States.

Trust in scientists was generally high. In every country, a majority of respondents—ranging from 59 percent in Brazil and Taiwan to 90 percent in Sweden—said that they trust scientists to do what is right for the public "a lot" or "some" of the time. Only the military enjoyed a comparable level of trust; business leaders, the national government, and the news media were generally regarded as less trustworthy. In the United States, 77 percent of respondents said that they trust scientists to do what is right a lot or some of the time, slightly below the median response among the twenty countries, 78 percent.

But trust in the objectivity of scientists was not so high. Respondents were asked whether they were more inclined to agree with "Scientists make judgments based solely on the facts" or "Scientists' judgments are just as likely to be biased as other people's." The median response among the twenty countries was 54.5 percent for the former and 40.5 percent for the latter. In only three countries were scientists more likely to be regarded as biased rather than objective: South Korea (50 percent biased, 48 percent objective), the United States (51 percent biased, 46 percent objective), and Taiwan (52 percent biased, 42 percent objective).

There was also a general tendency to trust experience over expertise. Respondents were asked which is the better way to solve problems: "Rely more on people who are considered experts about the problems, even if they don't have much practical experience; or Rely more on people with practical experience with the problems, even if they aren't considered experts." The latter was preferred in every country, sometimes by a large margin. In the United States, 66 percent of respondents favored experience over expertise, matching the median response among the twenty countries.

It is not entirely clear to what extent these three questions are measuring the same underlying attitude. The expertise-versus-experience question seems particularly problematic, because it emphasizes situations in which expertise and experience are not correlated, which are not necessarily typical. It is no coincidence, for example, that Dr. Anthony Fauci is both one of the world's leading experts on infectious diseases *and* one of the most experienced combatants of viral pandemics, including HIV/AIDS, the H1N1/09 swine flu, and COVID-19.

What factors affect trust in scientists? In its report, the Pew Research Center noted that "highly educated people and those on the political left tend to express more trust in scientists than those with lower levels of education and on the political right," although not in every country. In the United States, the tendency holds true: only 30 percent of respondents who did not complete postsecondary education said that they trusted scientists to do what is right a lot of the time, as opposed to 43 percent of respondents who completed postsecondary education and 48 percent of those who took three or more science courses there.

Similarly, although 38 percent of respondents in the United States overall said that they trusted scientists to do what is right a lot of the time, only 20 percent of those identifying as right-leaning said so, while 62 percent of those identifying as left-leaning said so—a gap of forty-two points. The gap between liberal Democrats and conservative Republicans was even wider, at fifty points. The Left/Right gap in the United States was the widest among the fourteen countries in which respondents were asked about their politics, with Canada, Australia, and the United Kingdom close behind with gaps of thirty-nine, twenty-nine, and twen-

ty-seven points, respectively.

There were similar ideological gaps regarding the questions about the objectivity of scientists and expertise versus experience. In all fourteen countries except South Korea, left-leaning respondents were more likely than right-leaning respondents to regard scientists as objective rather than as biased: the United States had the widest gap here, thirty-three points, between 64 percent and 31 percent. And in eleven of the countries, left-leaning respondents were more likely than right-leaning respondents to favor expertise over experience. Here the gap in the United States was twenty points, between 43 percent and 23 percent.

As for specific issues in science, only 75 percent of respondents in the United States said that human activity contributes "a great deal" or "some" to global climate change, below the median response among the twenty countries. But asked about childhood vaccines, 70 percent said that the preventive health benefits are high, and 60 percent said that the risk of side effects is low or none—above the median response in both cases. Asked about genetically modified foods, 38 percent said that they are generally unsafe to eat, and 27 percent said that they are generally safe to eat—below and above the median response, respectively.

In her 2019 book *Why Trust Science?*, historian of science Naomi Oreskes observes that society presupposes trust in experts, adding, "Scientists are our experts in studying the natural world and sorting out complex issues that arise in it. Like all experts, they make mistakes, but they have knowledge and skills that make them useful to the rest of us." Yet it is clear that trust in scientists cannot be taken for granted, so the investigation of the factors that affect it is critically important. Understanding data such as the results of the Pew Research Center's survey is crucial to any attempt to bring science to the level of trust that it deserves.

Glenn Branch is deputy director of the National Center for Science Education.

Belgian Skeptics Ask for Help in Defense against Lawsuit

Skepp, the Belgian Skeptics Group

It was heartwarming to see how much support and funds were raised for the case of Britt Marie Hermes, who now lives in Germany. She used to be a naturopathic "doctor" until she retired from the profession in 2014 and blew the whistle on her blog www.naturopathicdiaries.com. She was sued for defamation by American naturopath Colleen Huber, who lost the case before a German Court on May 24, 2019. Thanks to the Australian Skeptics, more than 50,000 euros (nearly $60,000 US) have been raised to help defend Hermes against Huber.

Our Belgian authors, Patrick Vermeren and Bart Van de Venare, are being sued by a multimillionaire, Carl Van de Velde, for defamation. Van de Velde, who markets himself as a business coach, is asking for damages of 400,000 euros ($473,000), even though his company records show an increased profit of 2.4 million euros (which is over a million more than the year before). In our opinion, this action is intended to have a chilling effect on skeptics. Vermeren and Van de Venare won the case before the Court of First Instance in Ghent, Belgium. So far, legal costs amount to 53,000 euros ($63,000). However, Van de Velde has decided to bring the case to the Court of Appeal. They are now facing lengthy court proceedings and more legal costs.

Our authors wrote a skeptical article in the Belgian SKEPP magazine about two companies active in the field of human resources that use dubious theories such as NLP (neurolinguistic programming) and characterization of people based on their skull (phrenology) and physiognomy (interpretation of outward appearance, in this case of face and hair). One of the two companies discussed in the article was the Carl Van de Velde Training Institute. Vermeren and Van de Venare have—based on careful research of multiple sources—criticized the content of the pseudoscientific master classes and the marketing tricks Van de Velde uses to attract participants.

We appeal to the international skeptic community to support the two authors of the Belgian SKEPP magazine and hope to receive the same (financial) support as Britt Hermes.

Carl Van de Velde and his training institute have been very successful financially. Van de Velde uses his deep pockets to scare and silence critics and skeptics. International solidarity among skeptics is our best bet to preserve freedom of speech and to remain skeptics both in writing and verbally. Skeptics should not be silenced. The Belgian SKEPP-tics have set up a fundraiser campaign. You can find it at https://skepp.be/lawsuit.

Spanish-Language *Pensar* Magazine for Science and Reason Returns

Alejandro Borgo

Launched in 2004, *Pensar: Revista Iberoamericana para la Ciencia y la Razón* (*Think: Ibero-American Magazine for Science and Reason*) was the first magazine published by the Center for Inquiry/Committee for Skeptical Inquiry for the Spanish-speaking public. Due in part to high printing and international postage costs, the magazine ended its print run in 2009.

However, *Pensar* has now returned in digital format. It deals with issues that interest skeptics, agnostics, and freethinkers. *Pensar* has several sections, including "Dossier," where reports on specific stories or matters related to beliefs, pseudosciences, people, or cases that have become famous (or infamous) in the skeptical and scientific worlds are presented. "Ask without Permission" is a column where readers can ask about any topic covered in the magazine, from paranormal claims to urban legends. Skeptical Inquirer Deputy Editor Benjamin Radford, who was Editor-in-Chief of *Pensar* when the magazine was in print, used to write this column.

"We Are Still Doing This" is a section that deals with those "unsinkable rubber duck" topics that never seem to go away no matter how often—or how thoroughly—they're debunked. Examples include flat-earth beliefs, alien visitations, the myth of blank votes in presidential elections, disease cures (including, recently, COVID-19), and of course perpetual plagues, such as astrologers and psychics. "Observatory" reports on the latest news from the paranormal world: UFOs, witchcraft, paranormal events, alternative medicines, and so on.

There is also a humor section, "The *Crabalocker Inquirer* Informs." In the satirical magazine *The Crabalocker Inquirer*, a pair of fictional authors, Albert Böhr and Uri Randi, write about the most hilarious cases of extravagant, irrational, insane, magical ideas. Other sections include reviews (of books, films, television shows, events, etc.) and opinion and editorial pages.

I am grateful that the Center for Inquiry has trusted me to relaunch and direct the magazine. We are making great strides and have started to publish articles in Portuguese (due to an agreement with Brazilian magazine *Questão de Ciência*) and English as well as Spanish. *Pensar* magazine is one more contribution—one more grain of sand—to spread critical thinking and freethinking. We have collaborators from many countries, including Argentina, Uruguay, Brazil, Perú, Venezuela, Puerto Rico, México, and the United States. Readers are encouraged to subscribe to *Pensar* at pensar.org.

Alejandro Borgo is a longtime skeptic based in Buenos Aires, Argentina; editor of *Pensar*; and author or coauthor of several books, including *Puede fallar, ¡¿Por qué a mí?! Los errores más comunes que cometemos al pensar, ¿Te atrevés a ser libre?* and *Beatles. Lo que siempre y nunca escuchaste sobre ellos.* He's also an accomplished musician and Beatles fan.

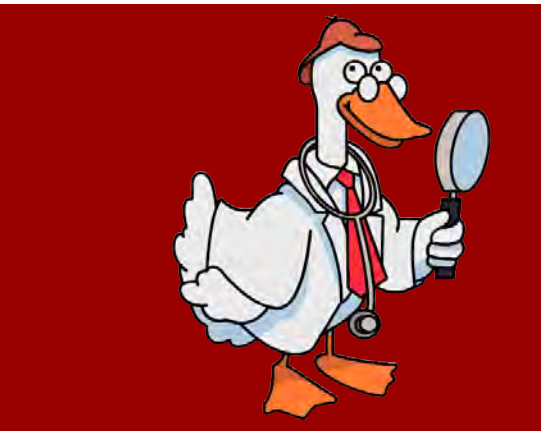
CFI Inoculates against COVID-19 Misinformation

William M. London

In March 2020, the Center for Inquiry (CFI) launched its online Coronavirus Resource Center (https://centerforinquiry.org/coronavirus/) to inoculate visitors against COVID-19-related misinformation. Resources include links to: 1) articles and columns providing reliable COVID-19 news and fact-checks of popular COVID-19 myths, misconceptions, and conspiracies; 2) original COVID-19 content published by CFI; 3) pages providing practical advice to consumers; and 4) trustworthy COVID-19 information resources. The Coronavirus Resource Center is frequently updated to make current information available. Other updates are provided through CFI's *Morning Heresy* online newsletter and through Skeptical Inquirer via social media.

In May, CFI added the "Dubious COVID-19 Treatments and Preventives" page (https://centerforinquiry.org/coronavirus-cure-claims/) to expose products and services that have been falsely advertised as effective against COVID-19. The page has been frequently updated and expanded since its launch and features more than two dozen alphabetically arranged, collapsible/expandable sections starting with "Acupuncture, Moxibustion, Traditional Chinese Medicine, and Chinese Herb-

als" and ending with "'Zappers' (Electric Current Devices)." Many of the sections include links to letters from the U.S. Food and Drug Administration or the Federal Trade Commission warning sellers to stop their illegal marketing activities. Some sections provide information about other regulatory actions, arrests, indictments, and court decisions.



CFI's Quackwatch offers a "COVID-19 Schemes, Scams, and Misinformation" page (https://quackwatch.org/consumer-protection/covid-19-consumer-protection/) that describes various types of schemes and scams for consumers to avoid related law enforcement actions and criminal prosecutions. It also provides links to investigative reports on untrustworthy COVID-19 information sources and links to trustworthy information sources. Another Quackwatch page organizes COVID-19-related news briefs from the free weekly e-newsletter *Consumer Health Digest* (https://quackwatch.org/about/chd/) into collapsible/expandable sections with headings such as "Legal and Regulatory Actions," "Marketplace Analyses," "Misinformation," and "Nostrums."

William M. London is a professor of public health at Cal State LA, the editor of the free weekly email newsletter *Consumer Health Digest*, and the developer of CFI's Dubious COVID-19 Treatments and Preventives page.

Noted Scholar and Skeptic Scott O. Lilienfeld Dies at Fifty-Nine

Stuart Vyse

On September 30, 2020, Scott O. Lilienfeld succumbed to pancreatic cancer at the age of fifty-nine, and the skeptical movement lost a valued member far too soon. Lilienfeld was the Samuel Candler Dobbs Professor of Psychology at Emory University and also a visiting fellow at the University of Melbourne in Australia. A tireless advocate for rigorous science in his field, Lilienfeld was widely recognized as the foremost authority on pseudoscience in psychology and a preeminent scholar of psychopathology.

He also was a treasured friend, colleague, and advisor to the Committee for Skeptical Inquiry and Skeptical Inquirer magazine. He was elected a fellow of CSI in 2000 and had served as a member of the CSI Executive Council since October 2010. He also was a consulting editor for Skeptical Inquirer. He was a speaker at CSICOP/CSI conferences in 2002, 2011, 2012, and 2013 and at the CFI Reason for Change conference in Amherst, New York, in 2015.

Lilienfeld was active to the end, writing and working closely with his scientific and skeptical colleagues. In fact, he coauthored two of the last four Skeptical Inquirer cover articles. He coauthored "The Nobel Disease" with colleagues Candice Basterfield, Shauna M. Bowes, and Thomas H. Costello in our May/June 2020 issue, and he was the lead author of "Intellectual Humility: A Guiding Principle for the Skeptical Movement" with Adele N. Strother, Bowes, and Costello in our September/October 2020 issue. Those who knew him were in awe at his ability and determination to continue working productively under terrible adversity.

Lilienfeld was born and raised in New York City. He received his BA in psychology from Cornell University in 1982 and his PhD in clinical psychology from the University of Minnesota in 1990. He was assistant professor in the Department of Psychology at State University of New York (SUNY) at Albany from 1990 to 1994 and had been a faculty member in the Department of Psychology at Emory since 1994.

As a scholar, Lilienfeld was enormously productive, publishing over 350 articles and writing or editing thirteen books. In 2002, he founded the journal *The Scientific Review of Mental Health Practice*, with the stated goal of presenting "objective investigations of controversial and unorthodox claims in clin-

ical psychiatry, psychology and social work." He was editor-in-chief of the journal *Clinical Psychological Science* and associate editor of *Archives of Scientific Psychology*. He also served on the editorial boards of several other journals, including *American Psychologist*. He was a past president of the Society for a Science of Clinical Psychology and the Society for the Scientific Study of Psychopathy. He was also a member of the Executive Committee of the Heterodox Academy. Among his many honors, Lilienfeld received the James McKeen Cattell Award for Lifetime Contributions to Applied Psychological Science from the Association for Psychological Science and the David Shakow Award for Early Distinguished Contributions to Clinical Psychology from the American Psychological Association. Just a few months ago, the Association for Psychological Science established a travel award in his name "to honor and extend" his influence on the next generation of clinical psychologists (see SI, September/October 2020).

Lilienfeld's most well-known books for general readers are *50 Great Myths of Popular Psychology: Shattering Widespread Misconceptions about Human Behavior* (coauthored with Steven Jay Lynn, John Ruscio, and Barry L. Beyerstein) and *Brainwashed: The Seductive Appeal of Mindless Neuroscience* (with Sally Satel).

For many years, Lilienfeld was a leading figure in the fight against facilitated communication (FC) and other pseudoscientific autism therapies, giving presentations about FC and publishing evaluations of these techniques. In 2015, he published a book for general readers and students titled *The Horse That Won't Go Away: Clever Hans, Facilitated Communication, and the Need for Clear Thinking* (with Thomas E. Heinzen and Susan A. Nolan). It tells the famous story of Clever Hans, the early twentieth-century German horse who was said to be capable of solving addition problems by stomping his front paw the requisite number of times. Scientific testing showed that Hans was being unconsciously cued by his owner, Wilhelm von Osten, and that he was unable to perform if von Osten was out of sight. The book goes on to draw a connection between the Clever Hans phenomenon and facilitated communication.

Most recently, Lilienfeld and colleagues began investigating whether intellectual humility may temper extremism and polarization and, if so, whether it is a skill that can be taught and learned. As Lilienfeld summed it up: "It's good to disagree if we hold respect for the other side. When we disagree to the point of not liking each other or hating each other, there is an increased risk for discord, extremism and violence." Among other things, this work led to the recent SI cover story "Intellectual Humility," mentioned earlier.

Equally as important as his enormous professional accomplishments, stories of Lilienfeld's warmth, generosity, and support fill the many remembrances of him. "He treated students like colleagues from day one," said Shauna Bowes, a student who worked in Lilienfeld's research group at Emory. "Scott never made you feel small or inadequate. Anything that you brought to the table he would look at and discuss. He built you up. He wasn't just a great intellect and a titan in his field. He was a wonderful person." Many people who came into contact with Lilienfeld have similar stories of his humanity and the kindnesses—small and large—that he performed for others.

Lilienfeld is survived by his wife, Candice Basterfield, and his sister, Laura Lilienfeld, who lives in West Palm Beach, Florida. He will be sorely missed by the worldwide skeptic community.

Stuart Vyse is former professor of psychology at Connecticut College and author of *Believing in Magic: The Psychology of Superstition*, among other books. He is a SKEPTICAL INQUIRER contributing editor and columnist and a fellow and member of the Executive Council of the Committee for Skeptical Inquiry.

Michael Marshall, Born Skeptic, New Editor of UK's *The Skeptic*

WENDY M. GROSSMAN

Photo by Gronk Oz, CC BY-SA 4.0, Wikipedia

Some are born to skepticism. Some are called to it. And some have it thrust upon them. Liverpool-based Michael Marshall, who in September 2020 was named the new editor of Britain's online skeptic magazine *The Skeptic*, thinks he was born that way.

"I almost envy the moments people describe as a sort of Damascene conversion," he says. He doesn't mention names, but it's easy to think of Chris French, whose beliefs changed after reading James Alcock. Instead, "I kind of always felt this way, but I didn't know what it was until I stumbled into podcasts and TV shows." He thinks it was Penn & Teller's *Bullshit!* series that opened the door to finding others like him. "I was interested that Teller never speaks." Looking that up led him to *The Skeptics' Guide to the Universe* podcast. "From there, I started reading the classics."

"The classics" he names are ones I read in 1981 on first encountering organized skepticism, such as James Randi's *Flim-Flam!* and Carl Sagan's *The Demon-Haunted World*. I took six years to found Britain's *The Skeptic* magazine. Marshall didn't wait.

"The first thing I did was cofound the Merseyside Skeptics Society (MSS). It came about because I didn't know anybody else, or if I did, they didn't care. I was the only one saying this matters because it's not true and people are being persuaded." To get started, he found and messaged a stranger in Liv-

erpool looking to start a skeptical group. A day later, he and Mike Hall started the MSS, which runs numerous events, challenges psychics and questionable medical claims, produces three podcasts, and hosts the highly successful annual QED conference.

Marshall is motivated by the desire to think broadly and take action. "The reason we created a society rather than a Skeptics in the Pub is that we didn't just want to be a group that puts on events." Soon, Marshall was arguing with psychic detective Joe Power and offering him this challenge: If Power could prove he's psychic, Marshall would take down the MSS web page criticizing his work. Instead, Power called the police to accuse Marshall of sending him death threats, a claim Marshall was able to counter effectively. "I don't wish him harm," he says. "Just professional harm."

In January 2010, the MSS staged the 10:23 "homeopathic overdose" event, at which skeptics gathered at locations such as drugstores to down a bottle each of homeopathic pills. The event spread to thirteen U.K. cities and was repeated in February 2011 at the first QED, when skeptical groups all over the world participated. No skeptics were harmed.

All of that—including a recent deep dive into flat-earth beliefs—is just his hobby. In his day job since 2014, Marshall is executive director of the Good Thinking Society (GTS), set up in 2012 by writer Simon Singh to promote skepticism after the British Chiropractic Association unsuccessfully sued him for libel. Singh's idea was that the voluntary nature of most skepticism means that people abandon efforts when they hit an obstacle, whereas a paid full-timer would have no excuse to quit.

One of Marshall's first efforts was discovering how much money the National Health Service (NHS) spends on homeopathy and where it goes. To find out, Marshall filed hundreds of Freedom of Information requests across the NHS.

The funding, he says, "was really only in places adjacent to a homeopathic hospital," he says. He began writing to those NHS bodies to point out that homeopathy is not a legitimate use of public funds. "Previously, any attempt to get rid of it would have been met by an aggressive defense by homeopaths, but they knew we were willing to go to court over it, so they couldn't just placate us." In the end, one by one the bodies withdrew the funding. GTS's involvement, he thinks, enabled the NHS bodies to say that they had to decide based on the evidence when facing contradictory claims.

A more recent project studied crowdfunding for alternative cancer treatments. "Very often, the clinic they're going to is a quack clinic peddling ineffective treatment, but no one realizes that." These efforts bypass the United Kingdom's strict advertising rules because the media picks up and amplifies these cases without the clinic's involvement. After six to eight months looking at every campaign he could find, Marshall estimated that these appeals raised £8 million between 2012 and 2018. This work, along with recommendations that the media classify these as science stories rather than human interest or lifestyle stories, became a cover story in the *British Medical Journal*.

More broadly, Marshall thinks that circa 2010, classical skeptical topics gave way to alt-med as the prevailing pseudoscience—and that today another shift is underway to conspiracy theories, a combination that is particularly difficult to unpack in medicine, as QAnon posters pop up at anti-mask rallies. "The people who thought 9/11 was an inside job didn't necessarily think the moon landings were faked," he says. "Conspiracy has the ability to amalgamate a whole worldview."

Wendy M. Grossman is an American freelance writer based in London. She is the founder of Britain's *The Skeptic* magazine, for which she served as editor from 1987–1989 and 1998–2000. For the past thirty years, she has covered computers, freedom, and privacy for publications such as the *Guardian*, *Scientific American*, and *New Scientist*. She is a CSI fellow.

A Computer-Generated Network of Possible Prebiotic Chemistry

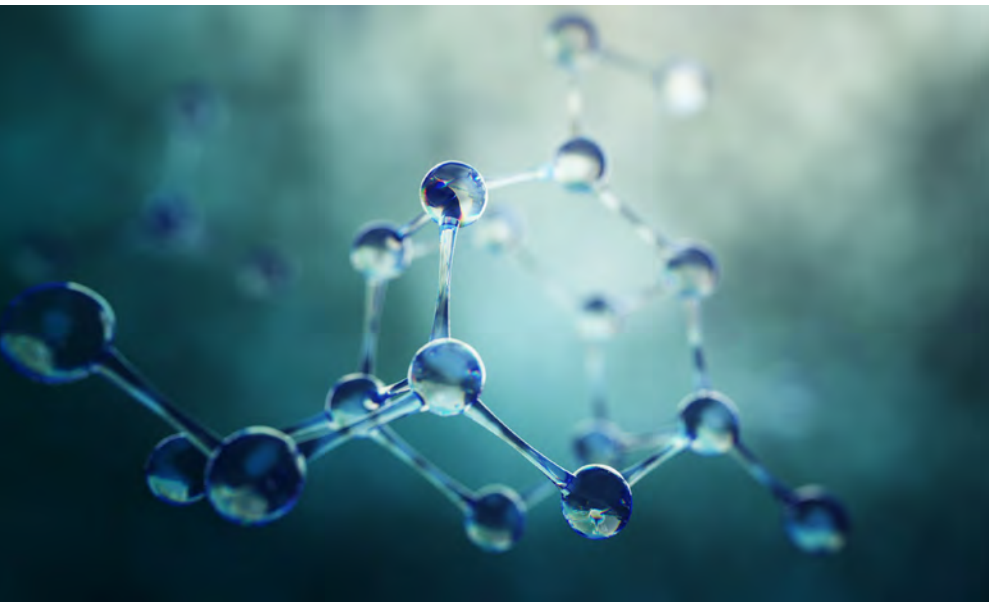
David W. Ball

Recently, Agnieszka Wołos and colleagues published a study that dramatically complicated the picture of prebiotic chemistry (*Science*, vol. 369, eaaw1955 [2020]), starting with just six fundamental building blocks—but also demonstrated the synthesis of dozens of known biotic molecules, some by multiple pathways and many in as few as three steps.

The authors used a desktop computer and defined six simple substances thought to be prevalent in prebiotic conditions—methane, ammonia, water, hydrogen cyanide, nitrogen, and hydrogen sulfide—using SMARTS, a coding method used to describe molecules so they can be manipulated by a computer. They then allowed the computer to apply a set of 614 well-known chemical reactions (which they called "transforms") that change the molecules at

The authors used a desktop computer and defined six simple substances thought to be prevalent in prebiotic conditions.

a carbon, oxygen, nitrogen, sulfur, or phosphorus atom. These transforms also consider the acidity (from highly acidic to highly basic), the presence of known metallic catalysts (especially copper, zinc, and manganese), the presence of other inorganic reactants (phosphates, acids, and bases), and known reaction yields (from trace to >80 percent yield). They let the computer program run the reactions on the initial starting materials, then took the products of that first iteration (Generation 1 products, or



G1) and re-reacted them with the same set of 614 reactions to generate G2, then took the G2 products and reacted them, and so forth. The paper describes their results and directs readers to additional materials available online.

The results are very thought-provoking. Briefly, in the first seven generations, the authors identified 10; 16; 78; 372; 1,115; 9,163; and 34,284 compounds having masses of less than 300 (a self-imposed size limit to keep the data manageable). Of these, eighty-two are biotic molecules: amino acids, peptides, nucleic acid bases, carbohydrates, and other known metabolites such as lactic acid. The authors set up an online gateway (which can be accessed at www.allchemy.net; new accounts are free) that can be used to explore the details of their work as well as continue developing generations.

The paper is not just an announcement of molecules being synthesized. The researchers noted that while most of the reaction pathways are already found in previous literature, they discovered that their network of chemical reactions gave several new pathways to synthesize biotic molecules. One example they gave was uric acid, which is a product of the chemical breakdown of certain DNA nucleotides and is excreted in urine. Although uric acid has been identified as a product in some previous origin-of-life research, it was detected only in trace amounts, while the new pathway (which the authors verified experimentally by carrying out the reactions in the computer-generated pathway) produced uric acid in five synthetic steps and had an overall yield of 1 percent.

The authors made three additional points that have particular meaning to the origin-of-life research community. First, the network generated some compounds that were able to catalyze reactions in higher generations. For example, they noted the formation of formaldehyde in G2, which can act as a catalyst in certain hydrolysis reactions and dramatically increase their yields. Analysis of the network indicated that the presence of formaldehyde led directly to the formation of 2,600 new molecules that would otherwise not be synthesized. Acetate, imidazole, phenylalanine (an essential amino acid), and iminodiacetic acid (IDA) were also noted catalysts, ultimately contributing to the formation of over 21,500 new molecules.

Second was the appearance of chemical cycles, in which products of later generations could serve as feedstock for previous generations and become self-generating with the input of additional reactants—just like a living organism does. Again, the authors experimentally verified one of the cycles involving IDA and noted a yield of 126 percent, indicating a regeneration of more IDA in the cycle than was originally reacted.

Third, and most potentially interesting, was the detection of molecules known as surfactants, a type of chemical that acts as a "surface active agent." In this study, surfactant molecules such as fatty acids were predicted to form. In real life, surfactants are long-chain molecules that typically have an electrical charge on one end, although there are some neutral (not electrically charged) surfactants. Surfactants are used as soaps and detergents and occasionally as antimicrobial agents. In living organisms, surfactant molecules are used to make what the authors call "biological compartmentalization[s]"—that is, cells. A careful reading of the paper suggests that the formation of fatty acid surfactants may be a prediction unique to this network, although surfactants comprising short chains of certain amino acids were found in previous studies.

What does all this mean? First, it does *not* mean that we know how life arose from a prebiotic Earth. However, this is another piece of the puzzle that suggests that there is little barrier for the chemicals of non-life to become the chemicals of life. After all, the theory of vitalism—that the chemicals of living organisms are fundamentally different from the chemicals of non-life—was disproven about 200 years ago. Nor has it ever been demonstrated that it is *not* possible to transform non-living chemicals into chemicals of life. If that were ever demonstrated, creationists would have one real scientific argument in their arsenal instead of just vapid rhetoric. Nope, sorry—this work is another demonstration that not only are the chemicals of life rather easy to synthesize, but they may also be inevitable.

David W. Ball is a professor of chemistry at Cleveland State University in Ohio. He also discussed another interesting origin-of-life chemistry study in the January/February 2020 Skeptical Inquirer.

[INVESTIGATIVE FILES JOE NICKELL

Joe Nickell, PhD, is CSI's senior research fellow. A former stage magician and private detective, he has also been a consultant in cases of homicide, questioned documents, and other forensic matters.

Occult Angel: The Mormon Forgeries and Bombing Murders

In October 1985 in Salt Lake City, Utah, two bombing murders drew attention across the United States. Then a third bombing occurred, but the victim survived. When detectives went to his hospital room to interview the man—a young Mormon who sold rare historical documents—they caught him in a lie about how he had reached in his car for a parcel someone had placed there. Thus was exposed Mark W. Hofmann as the probable murderer. In time, it would also be learned that Hofmann was one of the greatest forgers of all time who had fooled some of the best-known experts.

Perhaps Hofmann's most controversial document was the "salamander letter," supposedly penned in 1830. One of numerous Mormon-related papers Hofmann sold, it assigned somewhat scandalous occult-magic practices to an earlier con man, Mormon founder Joseph Smith, who purportedly recovered golden plates on which the text of the Book of Mormon was bestowed. Hofmann's greed and warped genius, which led him to face both financial ruin and possible criminal exposure, had ultimately led to the bombings. Although the FBI laboratory and a historical-document expert failed to disprove the salamander letter's authenticity, I provided early evidence to the district attorney's office that it was a fake. Much more evidence would follow. This is a summary of that long, grim, and fascinating case.

Mormon Seer

The founder of the Mormon church—the Church of Jesus Christ of Latter-day Saints—was Joseph Smith Jr. (1805–1844), who was allegedly visited by an angel.

He had been born into a poor unchurched but religious family in Sharon,

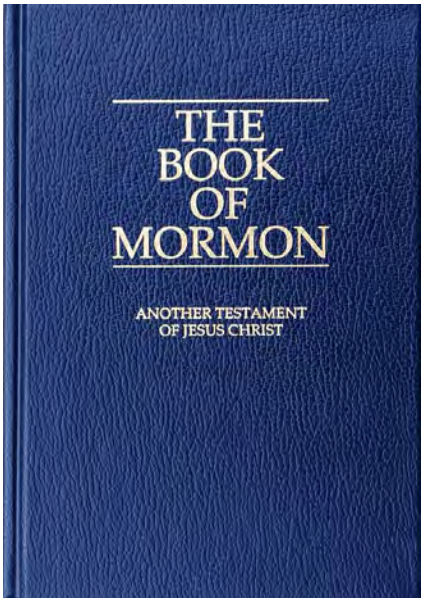
Vermont, the third of nine children. A contemporary recalled him as a disheveled boy who wore patched clothing with homemade suspenders and a battered hat. He was characterized as a "good talker" with a "fertile imagination," indeed "a romancer of the first water" (Taves 1984, 16). At the age of fourteen, troubled by religious rivals in his locale, he sought out, he said, a wooded area where he hoped to commune directly with God.

This, his first attempt, found him surrounded by a thick darkness and "seized upon by some power," an "enemy which held me bound." He then saw "two personages, whose brightness and glory defy all description." One called him by name and, gesturing at the other, said, "This is my beloved son, hear Him." He asked the two personages which of the various sects was the right one to join, but he was told all were corrupt. "And many other things did he say unto me, which I cannot write at this time" (quoted in Brodie 1993, 21–22).

Smith would give different versions of his visions, but they apparently seemed genuinely real to him. His account suggests he probably dozed off and experienced a common "waking dream" (a hypnagogic hallucination that occurs between being fully awake and asleep). And his reference to an entity having "held me bound" suggests the immobility caused by the sleep paralysis that often accompanies such an experience (Nickell 2013, 279).

At the age of seventeen, Smith had another such vision, again entirely consistent with a hypnagogic hallucination. This was the appearance *at his bedside* of a white-robed "messenger" named Moroni who was sent to say that God had work for him to do (Taves 1984, 277). The following year, 1823, Smith claimed Moroni revealed the existence of a new gospel called the Book of Mormon, engraved on gold plates that were hidden in a hill near Palmyra, New York.

Smith translated, or pretended to translate, the alleged plates by scrying (crystal gazing), an occult technique he had already employed in the folk practice of "money digging"—searching for buried treasure for clients. He was once



arrested for imposture (Persuitte 2000, 40–53; Taves 1984, 17–18). However, he appears to have been a "fantasizer"—that is, to have had what is called a fantasy-prone personality (Wilson and Barber 1983; Nickell 2013, 281). (Of course, deception and fantasy are not mutually exclusive.) Significantly, say Wilson and Barber (1983, 371), "individuals manifesting the fantasy-prone syndrome may have been overrepresented among famous mediums, psychics, and religious visionaries of the past." And they specifically include Joseph Smith in their list of historical fantasizers (Wilson and Barber 1983, 372).

For the translating, Smith used his imagination while also borrowing from certain contemporary writings. He would sit on one side of the room staring into a special seer stone, with an early convert named Martin Harris on the other side, writing at a table, a blanket across a rope separating the two (Taves 1984, 35–40). After the translation, Smith claimed, he returned the plates to the angel Moroni—thus thwarting critics who wished to examine them. Harris was permitted to show a "transcript" of the plates' text to certain experts, including Columbia University professor Charles Anthon. Anthon concluded the language was bogus and the tale a hoax. However, Smith persuaded the credulous Harris that the original scribe had switched to a "shorthand" form of Egyptian writing unknown to the professor.

Smith translated, or pretended to translate, the alleged plates by scrying (crystal gazing).

After the Book of Mormon was published in 1830, Joseph Smith and associate Oliver Crowdery—having allegedly been conferred priests by divine revelation to Smith—officially founded the Church of Christ at Fayette, New York. Eight years later, the name was changed to the Church of Jesus Christ of Latter-day Saints. Smith and his brethren founded a settlement at Kirkland, Ohio, also establishing a bank *after* he ran out of money! To convince creditors of its security, he reportedly filled the vault's strongboxes with sand, scrap iron, etc., and topped that with a layer of bright half-dollar silver coins. Prospective customers were thrilled until the bank failed in 1838 and Smith "declared bankruptcy with his feet," fleeing with his followers. He founded other communities, meeting his end in Nauvoo on the Mississippi River when a mob stormed the jail where he and his brother Hyrum were held (Hansen 1995, 365).

White Salamander

Forger Mark Hofmann must have cynically admired con man Joseph Smith, whom he came to imitate. Hofmann fabricated numerous documents regarding the colorful and controversial history of the Latter-day Saints movement. By focusing on and even inflating the questionable magical practices of Smith—something of an embarrassment to the orthodox views of the modern church—Hofmann may well have believed church authorities would want to suppress the documents by acquiring them, thus significantly increasing their selling price on the historical market. But it is still debatable to what extent that may have been the case.

The salamander letter (introduced in 1984) especially differed quite

The salamander letter conjured up, so to speak, previously unheard of aspects of Smith's involvement with the occult.

markedly from the accepted version of Smith's practices. It conjured up, so to speak, previously unheard of aspects of Smith's involvement with the occult. The letter was supposedly penned by Martin Harris (who had written down Smith's "translations" from the gold plates) and addressed an early Mormon convert named William Wines Phelps. Hofmann benefitted from the fact that there were almost no authenticated examples of Harris's handwriting except for signatures (Throckmorton 1988, 544). In the letter, "Harris" refers to the use of a seer stone, enchantments, and conversing "with spirits." "Joseph," he says, "found some giant silver spectacles with the [gold] plates"; he "puts them in an old hat & in the darkness reads the words & in this way it is all translated and written down" ("Salamander letter" 2020).

The letter's major innovation is that instead of the angel Moroni, "Harris" mentions a "white salamander" that transformed itself into a spirit and gave instructions to Joseph. To obtain the "gold bible," he was to bring with him his brother Alvin. However, because Alvin was dead and buried, Joseph asks, "shall I bring what remains?"—but the spirit has vanished, only to say later, "I tricked you again." (The 1993 film *The God Makers II*, supposedly an exposé of Mormonism, suggests that Joseph Smith was indeed required to exhume his brother's remains and bring a portion to receive the gold plates, but the only source for this scandalous "fact" is the bogus salamander letter.) To address the issue of the controversial white salamander, Hofmann showed one researcher an 1828 dictionary that indicated a salamander could be assigned mystical powers such as living in fire; thus, it could conceivably be an angelic messenger that transformed into a spirit ("Salamander letter" 2020; Sillitoe and Roberts 1988, 275).

Hofmann initially attracted little suspicion, because he himself was a Mormon with a reputation for being both extremely knowledgeable and honest in the field of historical documents. His forgeries were so good that they fooled collectors and even document dealers. A persistent problem was unproven provenance (historical record), but the chain of ownership of many genuinely old documents cannot be established. Still, Hofmann's often too-good-to-be-true offerings did raise some doubts, and those increased after the bombings in October 1985 and again after he was charged with two murders, forgery, and fraud in February 1986.

Hofmann initially attracted little suspicion, because he himself was a Mormon with a reputation for being both extremely knowledgeable and honest.

The salamander letter had presented special problems as to authentication. Prominent historical-document dealer Kenneth W. Rendell stated that the paper, ink, handwriting, and postmark were all consistent with the 1830 date, concluding that there was nothing to indicate that missive was anything other than authentic. Similarly, a report by the FBI laboratory stated that no signs of forgery were discovered (Sillitoe and Roberts 1988, 170, 291–292). However, I later spotted the salamander letter as a fake from a photograph. It had been folded and sealed incorrectly for a letter of 1830—before envelopes were common. I reported this in a letter to prosecutor Gerry D'Elia (Nickell 1986), while forensic examiners were preparing their case against Hofmann.

Set a Thief …

Mark Hofmann and I had, quite ironically, parallel careers. By about the late 1970s, we were each studying watermarks and other aspects of antique paper, formulating inks from original recipes, learning to cut quill pens, practicing period styles of handwriting, and acquiring numerous other esoteric skills in making fake historical

documents. Hofmann was doing his work in secret, motivated by greed and sociopathic tendencies. I, on the other hand, called myself an "academic forger" and promised autograph expert Charles Hamilton that—if he would tutor me in the art of forgery—I would never turn to a life of crime. I was operating on the old principle "Set a thief to catch a thief" (as I had done earlier in a more targeted fashion when I worked undercover as a Pinkerton detective to infiltrate criminal operations).

I called myself an "academic forger" and promised I would never turn to a life of crime.

Indeed, not only would Hamilton agree and provide a generous foreword to my magnum opus, *Pen, Ink, & Evidence* (Nickell 1990, vii), but when he served as a consultant to the prosecution in the Hofmann case, he suggested they seek my advice on the matter of ink. Hamilton would have said something like, "Nickell probably knows as much about making and artificially aging iron-gallotannate ink as anyone—with the possible exception of Mark Hofmann."

Thus prosecutor Gerry D'Elia (whom I had earlier advised about the incorrectly folded salamander letter) telephoned me at the University of Kentucky about Hofmann's suspected forgeries. I went over the basics of making iron-gall ink: soaking crushed oak galls in rainwater to extract tannic and gallic acids, straining the decoction, and adding copperas (hydrated iron sulfate) to create a chemical reaction that yields a black color, followed by gum arabic to increase viscosity and act as a binder. (See Nickell 1990, 37, for a photo essay on this procedure.) I also advised D'Elia how one could make a similar ink using an ordinary chemistry set or even improvise an iron-gall ink from household items, such as using instant tea for the tannic acid.

Our discussion then turned to "old" iron-gall ink as it typically appears on historical documents. D'Elia wanted to know how the ink could be artificially aged to simulate the black ink having turned rust-colored. I explained that there are basically two methods. One involves heating (slowly baking the document or applying a hot iron—both risky to the paper). The other uses chemicals: hydrogen peroxide or ammonium hydroxide. D'Elia then indicated to me that Hofmann had apparently used the latter because, under ultraviolet light, his suspect documents looked as if they had been dipped in some solution and then hung up to dry.

A subsequent forensic report on the Hofmann documents (compared with actual historical documents) discussed the use of hydrogen peroxide or ammonium hydroxide to artificially age the ink (and also produce a telltale "slight blue hazing effect on the paper itself," under ultraviolet light).

As to the mis-folded, pre-envelope salamander letter, the report also stated (after Nickell 1986), "Most stampless cover letters are folded so that the contents are not visible unless [the] sealing wax is broken. This letter was folded so that one end was open, and the contents could be seen by looking in the end" (Throckmorton 1988, 544).

The homicides were more straightforwardly dealt with than the forgeries. As to motive, Hofmann had been threatened with civil and criminal consequences—by Steve Christensen (who had purchased the salamander letter) and others. Evidence showed that the explosive devices were pipe bombs with generic components, fitted with mercury switches (Sillitoe and Roberts 1988, 450–454).

The homicides were more straight-forwardly dealt with than the forgeries.

* * *

On January 23, 1987, justice was handed out. Mark Hofmann avoided the death penalty by agreeing to plead guilty to two counts of second-degree murder—of Steven F. Christensen and Kathleen W. Sheets—plus one count of second-degree theft by deception for selling the salamander letter to Christensen and one count of obtaining money from a man named Alvin Rust for a nonexistent batch of documents known as the McLellin collection. Hofmann agreed to answer questions about these crimes before his plea was entered in court, and several other charges in Utah and New York were dismissed (Sillitoe and Roberts 1988, 474–481).

Left unresolved were many other forged documents that seem to match Hofmann's *modus operandi* and show up from time to time. Those I have disauthenticated include a promissory note (signed with an "X") by famed mountain man Jim Bridger and an incomplete copy (missing the first page) of the forged Gettysburg Address "signed" by Abraham Lincoln (Nickell 2009, 94–95, 67–79). Historians and collectors, beware. ■

References

Brodie, Fawn M. 1993. *No Man Knows My History: The Life of Joseph Smith*. 2nd ed. New York: Alfred A Knopf.

Hansen, Klaus J. 1995. "Joseph Smith." *Encyclopedia of Religion*. Vols. 13–14. New York: Simon and Schuster.

Nickell, Joe. 1986. Letter to Gerry D'Elia, March 28 (cited in Nickell 1990, 188).

———. 1990. *Pen, Ink, & Evidence: A Study of Writing and Writing Materials for the Penman, Collector and Document Detective*. Lexington: University Press of Kentucky.

———. 2009. *Real or Fake: Studies in Authentication*. Lexington: University Press of Kentucky.

———. 2013. *The Science of Miracles: Investigating the Incredible*. Amherst, NY: Prometheus Books.

Persuitte, David. 2000. *Joseph Smith and the Origins of the Book of Mormon*. 2nd ed. Jefferson, NC: McFarland.

Salamander letter. 2020. Available online at https://en.wikipedia.org/wiki/Salamander_letter; accessed June 23, 2020.

Sillitoe, Linda, and Allen Roberts. 1988. *Salamander*. Salt Lake City, Utah: Signature Books.

Taves, Ernest. 1984. *Trouble Enough: Joseph Smith and the Origins of the Book of Mormon*. Amherst, NY: Prometheus Books.

Throckmorton, George J. 1988. Forensic analysis by George J. Throckmorton. In Sillitoe and Roberts 1988, 531–552.

Wilson, Sheryl C., and Theodore X. Barber. 1983. The fantasy-prone personality. In *Imagery: Current Theory, Research and Application*, ed. by Anees A. Sheikh. New York: Wiley, pp. 340–390.

[NOTES ON A STRANGE WORLD

MASSIMO POLIDORO

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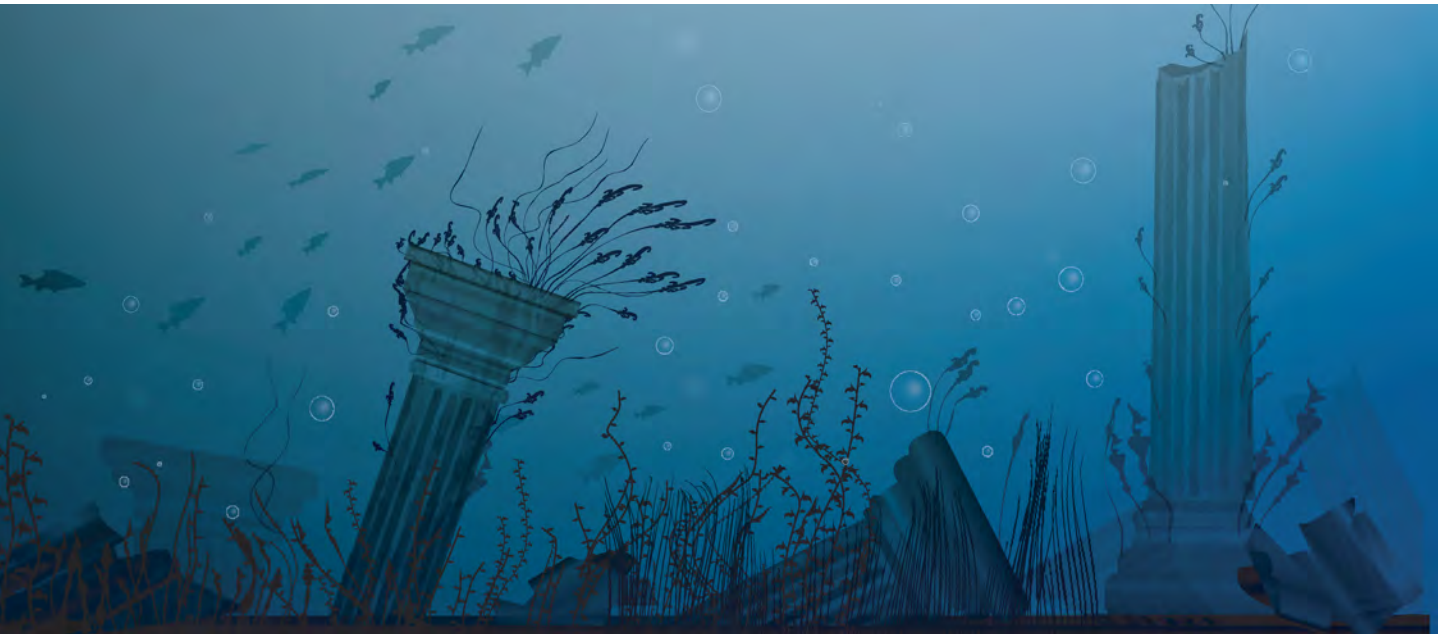
Atlantis under Ice? Part 2



Atlantis? It is hidden in plain sight, under the thick ice of Antarctica! This claim was made popular in the 1990s by pseudo-archeological theories in many popular books. But the original idea was born in Italy in 1974, when engineer Flavio Barbiero first mentioned it in his book *A Civilization under Ice.*

The premise is intriguing: About 10,000 years ago, Earth was hit by a comet or asteroid, causing a series of almost instantaneous global transformations. The axis of rotation changed, the poles suddenly moved thousands of kilometers, and the impact raised a cloud of dust that triggered torrential rains, with the consequent lowering of temperatures and the start of the great glaciation. People of Atlantis—an advanced marine civilization that flourished on the continent of Antarctica—were forced to flee, when the change in temperatures caused snow to fall for weeks (and perhaps months), until a frozen blanket, tens of meters thick, finally buried Atlantis with all those who had not managed to escape. The survivors, scattered around the world, began to interact with the Paleolithic locals, teaching them to cultivate the fields and accelerating the development of civilization, thus suddenly originating the Neolithic age.

Where Is Everyone?

Barbiero recognizes that all these claims can at best be considered suggestive and that only the discovery of archaeological traces of Atlantis would be considered evidence. "It would be enough to find even a single brick to prove its existence and revolutionize all ancient history and geology from its foundations."

However, the "brick" of Atlantis is still missing. Not only have no traces of prehistoric human life ever been found on Antarctica, but there are none in the places where the Atlanteans would have repaired after the flood. If indeed these highly evolved people brought civilization to America, Africa, and Asia 10,000 years ago, there is no trace of them. The first signs of higher civilization are much more recent, dating back to 4000 BCE with some rare exceptions. Barbiero's answer is that the Atlanteans, being sailors, settled mainly on the

Not only have no traces of prehistoric human life ever been found on Antarctica, but there are none in the places where the Atlanteans would have repaired after the flood.

coasts of the various countries, and the coasts, following the melting of the ice, ended up submerged at a depth of 130 meters. Likewise, the remains of the Atlantean cities created when the Sahara was fertile would have ended up in the desert sand. Indeed, these Atlanteans seem very unfortunate.

"This is a fascinating but very mechanistic hypothesis, which is based on assumptions, in the current state of our knowledge, which cannot be demonstrated," archaeologist and best-selling writer Valerio Massimo Manfredi (2012) told me.

In fact, too many factors are assumed (the impact of a comet; the shifting of poles; the sudden glaciation; the fact that the Atlanteans were sailors with huge ships and therefore ready to save themselves; the lack of archaeological evidence because it was all hidden by water, ice, or sand; etc.) to try to prove something not known to have even happened. When Plato wrote for the first time of Atlantis, he did so in two philosophical dialogues in which he imagined a perfect society that ended in ruin for its pride. It's an imaginative hypothesis that Barbiero takes literally.

The Extinction of Mammoths

According to Giorgio G. Bardelli, zoologist at the Civic Museum of Natural History of Milan:

> The fact is that no evidence has ever been found in Antarctica (fossils, archaeological remains, artifacts, etc.) of the existence, on that continent, of a human civilization. On the contrary, the numerous cores performed in the Antarctic ice, often a few thousand meters, have made it possible to reconstruct the climatic history of the earth over a period of several hundreds of thousands of years, during which Antarctica has always been covered by ice and characterized by conditions, similar to the current ones, completely incompatible with the existence of a human civilization. (Bardelli 2012)

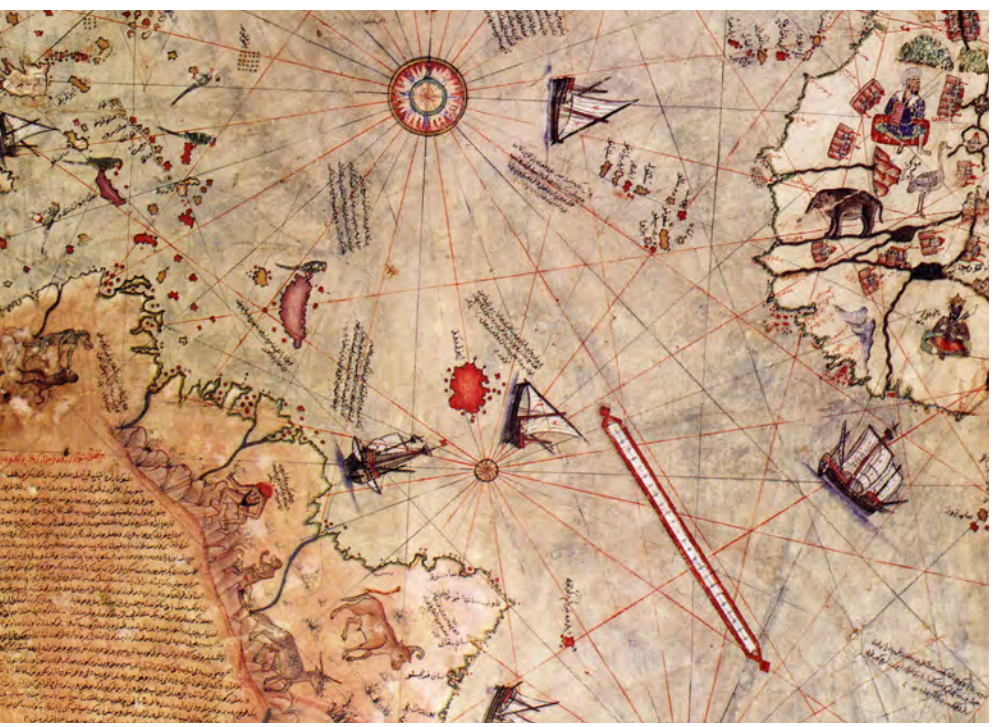
Not even geoscience leaves room for misunderstandings. Says Francesco Paolo Sassi of the Department of Geosciences at the University of Padua:

> In the popular imagination, climatic variations are often associated with a "pole shift," but the geological evidence shows that climatic variations are normally due to other causes—astronomical, geological—of the climate system. Paleoclimatology is able to document the climatic variations of the last 10 million years. In particular, in the last 10,000 years there have been no sudden and traumatic changes in temperature, except for an event lasting a few centuries around 8,200 years ago (of maximum hemispheric scope) and a modest change in the distribution of solar radiation due to astronomical causes. Orbital but very significant hydrological consequences in the intertropical belt were produced in several stages but culminated around 4–5 thousand years ago, which led to the desertification of the Sahara. In conclusion, there is no geological evidence of an impact around 10,000 years ago that produced climate cooling. (Sassi 2012)

But if there was no instant Ice Age, how could that mammoth freeze with the herbs that grow in temperate zones still in its stomach? Bardelli has the answer:

> The fact is that mammoths populated tundra environments, such as the one found today in the northernmost regions of Eurasia or Canada. It was therefore not a question of temperate environments. They were not temperate environments; neither they were covered with ice. They were generally plains rich in lichens, mosses, herbaceous plants but also trees typical of cold climates such as birches and conifers. The short Arctic summer, with the thawing of the superficial portion of the frozen ground, the so-called permafrost, transforms a part of these environments into marshy areas, in which mammoths and other large animals could get trapped and die, and then be preserved entirely due to the frost. It must also be said that mammoths did not go extinct everywhere at the same time, as should have happened following a sudden and short-lived catastrophe. The last specimens even survived up to the Holocene, that is, up to less than 4,000 years ago, on the island of Wrangel in the Arctic Ocean. (Bardelli 2012)

And all the other animal species that suddenly went extinct 10,000 years ago?



Bardelli also has the answer for that:

> The extinction of the great Pleistocene fauna did not occur simultaneously throughout the world. For example, in America it occurred about 12–13,000 years ago, in Australia about 50,000 years ago. Some scholars think that man may have played a role in the disappearance of many species, given that the dates roughly coincide with the colonization of those lands by our species, but the question is controversial. In any case, as for all other biological crises, even that of the megafauna of the Pleistocene is probably due to complex of causes, which did not happen simultaneously and in the same way on all continents. It is widely believed among most scholars that the climate changes that repeatedly occurred during the Quaternary were the most important cause. (Bardelli 2012)

Philosophers and Cartographers

Finally, what about the cartographic evidence? As for the Piri Re'is map, it has now been established that it does not depict Antarctica but is rather the folded continuation of Brazil. According to scholar and art historian Diego Cuoghi:

> The representation is deformed, bent to the right, most likely to adapt to the particular shape of the parchment. Let us remember that the longitude would have been calculated in a precise way only in the following century, so considerable approximations were used in the maps. Although deformed, some details such as the Gulf of San Matias and the Valdes peninsula can be recognized, and the end could be Tierra del Fuego. If we look closely at the lower right end, the one that should represent Antarctica, we see the drawing of a snake, and in the note by Piri Reis we read: "This land is uninhabited. Everything is in ruins and it is said that large snakes have been found. For this reason the Portuguese infidels have not landed in these lands which are said to be very hot." Certainly such a description has nothing to do with Antarctica. (Cuoghi 2012)

As for the other medieval maps, the round one would be a shape with precise meanings. Says Cuoghi:

> Those representations were composed according to the tripartite scheme: Asia (top) Europe (bottom left) and Africa (bottom right). The world, at the center of which is Jerusalem, is surrounded by the ocean, beyond which the twelve winds are depicted. There are also many fortified cities (Rome, Athens, Constantinople …) and various regions (Spain, England, Greece …), all with their names clearly visible. In almost all those cited by Barbiero, the Earthly Paradise is also depicted. This type of globe did not take into account geographic knowledge but was intended as an ideal and philosophical representation and was based on the O-T scheme, derived from the manuscripts of Isidore of Seville. (Cuoghi 2012)

The Last 'Hope'

Despite extensive evidence against his idea and scant evidence for it, Barbiero was so convinced that he went so far as to organize an expedition crossing the Strait of Magellan in a rubber dinghy, risking his life just to land in Antarctica and prove the validity of his hypothesis. And today he would be ready to do it again. He has said:

> I pinpointed the exact spot via satellite. If I had the money to organize an expedition, I would go without fail. This is the place where the Mount of Poseidon is, meter plus meter minus. I would also have the tools to do a survey and to have a confirmation. (Stella 2001)

But maybe it won't even be necessary. If climatic trends continue, Antarctica will soon be largely ice-free, and nature will undertake to confirm or debunk a theory that is certainly ingenious but decidedly false. ■

References

Barbiero, Flavio. 1974. *Una civiltà sotto ghiaccio* (*A Civilization under Ice*), Editrice Nord.

Bardelli, Biorgio. 2012. Personal communication with the author.

Cuoghi, Diego. 2012. Personal communication with the author.

Manfredi, Valerio Massimo. 2012. Personal communication with the author.

Sassi, Francesco Paolo. 2012. Personal communication with the author.

Stella, F. 2001. Sui ghiacci di Atlantide. *Nexus* 33.

[REALITY IS THE BEST MEDICINE HARRIET HALL

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Ayurveda: Ancient Superstition, Not Science

Alternative medicine includes modalities such as acupuncture and chiropractic that are widely accepted despite the evidence for their effectiveness being far from convincing. It also includes lesser known systems of treatment. In the United States, the practice of Ayurveda is not licensed or regulated by any state, although Deepak Chopra has done much to publicize it. It is featured in textbooks of naturopathy and employed by various practitioners of "functional medicine" and "integrative medicine."

You may ask:

- Can I assume Ayurvedic remedies are safe?
- Has their effectiveness been established scientifically in well-designed clinical trials?
- Does the underlying rationale make sense?

The short answers to these questions are no, hardly ever, and no way!

Ayurveda is a system of medicine that originated in India and is still popular there. Eighty percent of the population of India and Nepal use Ayurveda. If Ayurvedic medicine is really effective, one might expect that Indians and Nepalese would be healthier and live longer than followers of other medical systems. They aren't, and they don't. (Admittedly, other factors may come into play, such as genetics and socioeconomic factors.)

The concept of "ancient wisdom" implies that any treatment that has been around for centuries and is still being used *must* be effective, or people would have stopped using it. This is not so. Astrology is ancient, and people still believe in it. They consult horoscopes to guide their lives. Psychology has many explanations for why people may persist in believing things that are not true: peer pressure, custom, false attributions, irrational hope, selective memory, confirmation bias, and much more. Astrology is not ancient wisdom; it's ancient nonsense with no basis in reality.

Ayurveda is prescientific and, by definition, prehistoric. History only began when people started writing things down. Ayurvedic beliefs were transmitted orally for centuries before they were put in writing. Its three main

texts were originally thought to date back to 600 BCE, but recent historians believe they were written between the second and fifth centuries CE. That makes them obviously prescientific; science is a recent development. For most of human existence, we had no systematic way to test our beliefs against reality.

Ayurveda's origin is basically religious. "Ayurveda is said to be an eternal science that first existed in the universal consciousness (Brahma) before it was passed from the creator to the ancient Indian mystics through meditation" (National Ayurvedic Medical Association N.d.a).

Early thinkers tried to make sense of their world and categorize things. They correctly guessed that the things they saw might be made up of things they couldn't see, but they didn't know about atoms, molecules, or the periodic table. The ancient Greeks imagined four humors: blood, black bile, yellow bile, and phlegm. They thought the humors explained different human personality characteristics (for example, melancholy was caused by an excess of black bile) and associated them with the four elements of earth, fire, air, and water; the seasons; and the qualities of hot, cold, wet, and dry. The ancient Chinese imagined that five elements (wood, fire, earth, metal, and water) were the basic components of everything in the universe. They classified people by their predominant elements and thought the elements determined personality traits.

The ancient Indians imagined five great elements (ether, air, fire, water, and earth), and Ayurveda groups them into three basic types of energy and functional principles: the doshas Vata, Pitta, and Kapha. Each dosha is subdivided into five types. For instance, Sadhaka Pitta, located in the heart, "governs emotions such as contentment, memory, intelligence, and digestion of thoughts." And Kledaka Kapha, located in the stomach, "governs moistening and liquefying of the food in the initial stages of digestion" (National Ayurvedic Medical Association N.d.b).

Each dosha comprises two of the five basic elements, which each have specific qualities (University of Minnesota N.d.). These elements are:

- Space (associated with expansiveness)
- Air (associated with gaseousness, mobility, and lack of form)
- Fire (associated with transformation, heat, and fire)
- Water (associated with liquidity and instability)
- Earth (associated with solidity and stability)

Furthermore, each dosha is associated with a specific bodily "build" or shape and is linked to certain personality traits. Ayurveda also links each dosha with particular types of health problems (University of Minnesota N.d.).

The National Center for Complementary and Integrative Health (NCCIH, formerly NCCAM) is usually supportive of alternative medicine and funds clinical trials to study it, but its information page on Ayurveda is pretty negative. It says that although 240,000 Americans use Ayurveda, "only a small number of clinical trials using these approaches have been published in Western medical journals … and few well-designed clinical trials and systematic research reviews suggest that Ayurvedic approaches are effective" (National Center for Complementary and Integrative Health N.d.). The studies they list suggesting benefits for arthritis, diabetes, and ulcerative colitis do not inspire confidence. They are small, preliminary pilot studies that have not been replicated. One study had only ten subjects. The NCCIH questions the safety of Ayurveda, pointing out that many Ayurvedic preparations contain toxic levels of heavy metals.

Symptoms are commonly associated with an imbalance of doshas. Excess Vata is said to cause mental, nervous, and digestive disorders, including low energy and weakening of all body tissues. Excess Pitta causes toxic blood to give rise to inflammation and infection. Excess Kapha is associated with an increase in mucus, weight, edema, and lung disease. Ayurveda claims to improve health by balancing the doshas. There is no evidence to support those claims. Even the categorization of doshas is suspect. I took three online quizzes that promised to tell me what dosha I was, and I got three different results.

The National Ayurvedic Medical Association (NAMA) says:

> Leveraging these basic principles, Ayurveda customizes preventative wellness to the unique constitution of every individual. … In addition, Ayurveda offers one of the world's most comprehensive cleansing protocols, known as panchakarma. This ancient practice uses five primary therapies to release and eliminate accumulated toxins from deep within the tissues, and return the doshas to their proper seats in the body. (National Ayurvedic Medical Association N.d.b)

NAMA claims that Ayurveda is a science, "the science of life," that "work[s] to harmonize our internal and external worlds" (National Ayurvedic Medical Association N.d.b). But no scientific evidence is to be found on their website.

And it gets even sillier. Here's a description of Ayurvedic texts from Quantum Publications' 1995 catalog:

> Ancient Ayurvedic texts describe each herb as a packet of vibrations that specifically match a vibration in the quantum mechanical body. All bodily organs, for example, the liver, the stomach and the heart are built up from a specific sequence of vibrations at the quantum level. In the case of a malfunction, some disruption of the proper sequence in these vibrations is at fault. According to Ayurveda, a herb exists with this exact same sequence, and when applied, it can help restore the organ's functioning. (qtd. in Barrett 2012)

There is no good evidence that Ayurveda is effective for treating any disease (Cancer Research UK N.d.). Early practitioners very likely stumbled on some effective treatments just by chance, but without scientific testing we have no way of knowing which ones.

There is no good evidence that Ayurveda is effective for treating any disease.

Safety Questions

In addition to the indirect harms from delaying or rejecting effective science-based treatments, practicing Ayurvedic medicine presents direct harms. Deepak Chopra's Sharp Institute was sued in 1995 (Barrett 2012). Chopra had performed pulse diagnosis on a patient and provided a mantra for "quantum sound treatment," and another Institute employee (Triguna, who was not a licensed health care practitioner) prescribed various Ayurvedic treatments. Triguna told the patient his leukemia was gone, but it wasn't; he died of it four months later (Barrett 2012).

Numerous studies have found that 20 percent or more of Ayurvedic medicines contain toxic levels of the heavy metals arsenic, lead, and mercury. And a 2015 study found elevated levels of lead in the blood of 40 percent of users. Numerous cases of lead poisoning due to Ayurvedic remedies have been reported in the medical literature (Barrett 2012).

Gwyneth Paltrow's reprehensible Goop website has information on Ayurveda and instructions on how to eat for your dosha.

Ayurvedic treatments include advice about diet, rest, specific medications, herbal remedies, massage, meditation, yoga, bowel cleansing (enemas, forced vomiting, laxatives, etc.), oil pulling, tongue scraping, eye washing, sneezing powders, leeching, bloodletting, cupping, and much more.

According to Kurt Butler, author of *A Consumer's Guide to "Alternative Medicine"*:

> The beliefs and practices of Ayurvedic medicine fall into three categories: (1) some that are obvious, well established, and widely accepted by people who have never heard of Ayurveda [e.g., relax and don't overeat]; (2) a few that proper research may eventually prove valid and useful [herbal remedies may contain useful drugs, but their dangers and limitations often have not been scientifically investigated]; (3) absurd ideas, some of which are dangerous [e.g., that most disease and bad luck is due to demons, devils, and the influence of stars and planets; or that you should treat cataracts by brushing your teeth, scraping your tongue, spitting into a cup of water, and washing your eyes for a few minutes with this mixture]. (Butler 1992)

Ancient Indian Surgery

It wasn't all bad. Ancient Hindu doctors were good surgeons. They introduced plastic surgery techniques to rebuild the noses of people whose noses were amputated to punish adultery. They removed bladder stones. They drained abscesses, did skin grafts, removed foreign bodies, splinted fractures, sutured wounds, performed amputations, and repaired anal fistulas. They even did Cesarean sections, saving the babies (but not the mothers). They treated cataracts by "couching," displacing the lens to improve vision. Couching has been described as "a largely unsuccessful technique with abysmal outcomes." For some patients, it improves the ability to sense light and movement, but patients still need powerful prescription lenses, and 70 percent of them are left effectively blind (Couching [ophthalmology] 2020).

Dosha-Based Diets

Not surprisingly, Gwyneth Paltrow's reprehensible Goop website has extensive information on Ayurveda and elaborate instructions on how to eat for your dosha. The information comes from Paltrow's Ayurvedic doctor consultant, known only as Dr. Chandan. Vata types are said to be spacey and anxious with active minds. Their qualities are "cold, light, irregular, rough, moving, quick, and always changing." They love excitement and new experiences, are lively conversationalists, and quick to anger but also to forgive. They have a thin, light frame and cold hands and feet; they also sleep lightly and have sensitive digestion (Chandan and Sharma N.d.).

Vatas are advised to have regular Ayurvedic massages, keep warm, get enough sleep, and minimize travel. Because Vata is a cold and dry dosha, warm, nourishing foods are good, including warm milk, cream, butter, warm soups, stews, hot cereals, fresh baked bread, raw nuts, and nut butters. Vatas should take a hot or herbal tea with snacks in the late afternoon. All sweet fruits are okay, as are spices, including cinnamon, cardamom, cumin, ginger, cloves, and garlic. To be avoided: cold foods, salads, iced drinks, raw vegetables, greens, unripe fruits (which are too astringent), too much caffeine, and candies. All dairy is acceptable. The best grains are cooked oats and rice. The best meats are chicken, seafood, and turkey in small quantities (Chandan and Sharma N.d.).

Ayurveda is a tribute to the imagination of early thinkers who tried to make sense of their world. But if you believe that reality matters, prescientific and prehistoric imaginings are not a rational choice for health care. ■

References

Barrett, Stephen. 2012. A few thoughts on Ayurvedic mumbo-jumbo. Quackwatch (August 28). Available online at https://quackwatch.org/consumer-education/chopra/.

Butler, Kurt. 1992. *A Consumer's Guide to "Alternative Medicine": A Close Look at Homeopathy, Acupuncture, Faith-Healing, and Other Unconventional Treatments*. Buffalo, NY: Prometheus Books.

Cancer Research UK. N.d. Ayurvedic medicine. Available online at https://about-cancer.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/complementary-alternative-therapies/individual-therapies/ayurvedic-medicine.

Chandan and Narendra Sharma. N.d. How to eat for your dosha. Goop.com. Available online at https://goop.com/food/recipes/ayurveda-how-to-eat-for-your-dosha/.

Couching (ophthalmology). 2020. Wikipedia. Available online at https://en.wikipedia.org/wiki/Couching_(ophthalmology).

National Center for Complementary and Integrative Health. N.d. Ayurvedic medicine: In depth. Available online at https://www.nccih.nih.gov/health/ayurvedic-medicine-in-depth.

National Ayurvedic Medical Association. N.d.a. History of Ayurveda. Available online at https://www.ayurvedanama.org/history-of-ayurveda.

———. N.d.b. What is Ayurveda? Available online at https://www.ayurvedanama.org/what-is-ayurveda.

University of Minnesota. N.d. What is the philosophy of Ayurvedic medicine? Available online at https://www.takingcharge.csh.umn.edu/what-philosophy-ayurvedic-medicine.

[BEHAVIOR & BELIEF STUART VYSE

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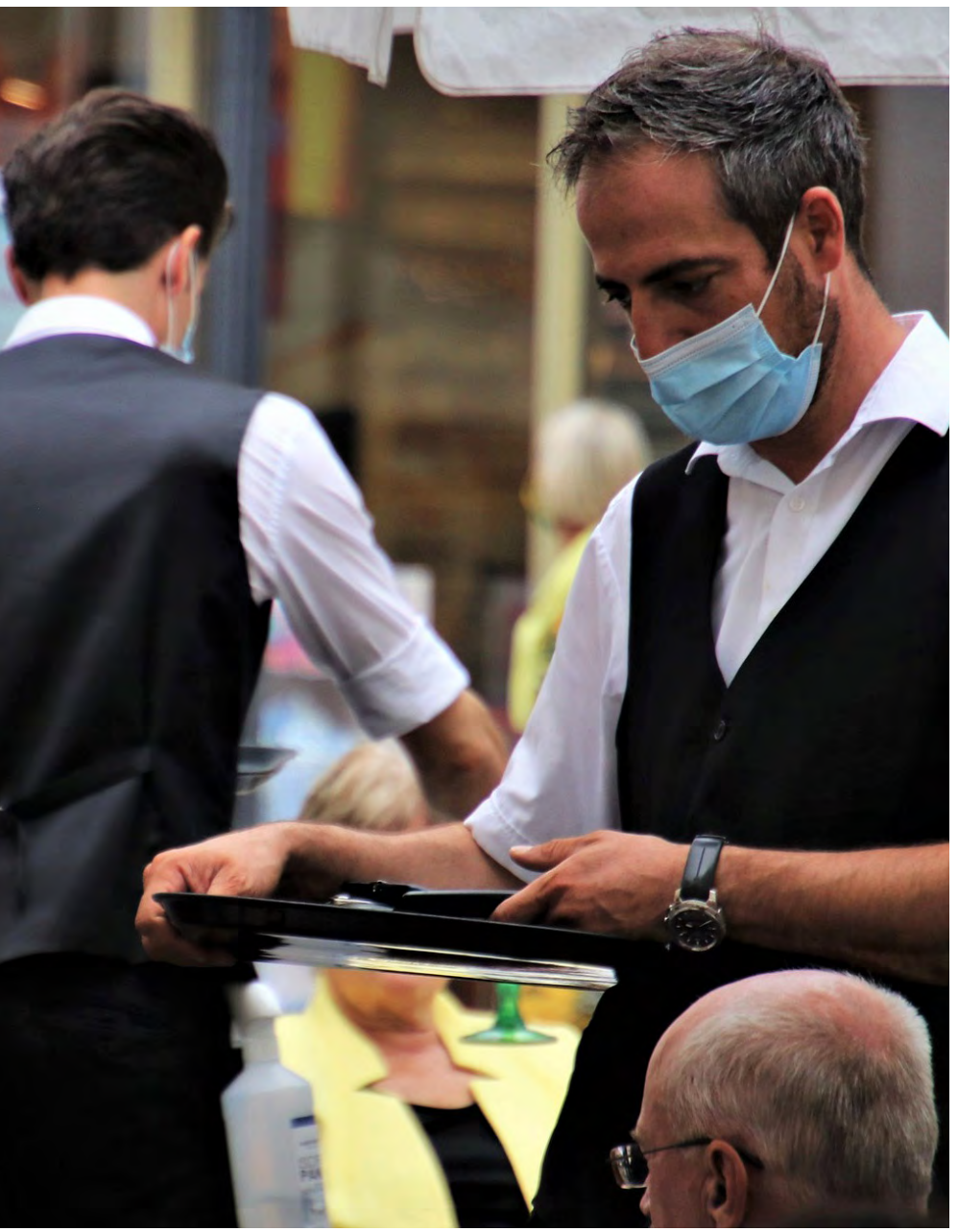
The COVID-19 Free Market Experiment



Courtesy of: Pixabay

My last column for Skeptical Inquirer landed me on a conservative Chicago-area talk radio program. I think something about the title, "COVID-19 and the Tyranny of Now" (Vyse 2020), caught the eye of one of the show's cohosts, so they invited me on to discuss the article in the morning drive slot. The conversation was polite, and although I tried to find as many points of agreement as possible, it soon became clear we actually had less in common than the host must have imagined.

In preparation for my appearance, I listened to the show for a few hours, and the hosts and callers spent much of their time complaining about the coronavirus health policies, such as the closing of restaurants, bars, and schools, imposed by the Illinois governor and Chicago mayor (both Democrats). On the morning of my interview, they were pointing to the increased number of "deaths of despair" during the stay-at-home period, in particular the rise in drug overdoses in the Chicago area.

These complaints about closings have been common at all levels of the Republican Party. On May 18, 2020, when the seven-day moving average of COVID-19 deaths was at 1,479, President Donald Trump tweeted "REOPEN OUR COUNTRY!" In early August 2020, as concerns about the reopening of schools were on people's minds, the president tweeted, "OPEN THE SCHOOLS!!!" Perhaps the strongest executive branch statement came from U.S. Attorney General Wil-

liam Barr (Forgey and Gerstein 2020) who said the public health restrictions represented an intrusion on civil liberties second only to slavery: "You know, putting a national lockdown, stay-at-home orders, is like house arrest. It's—you know, other than slavery, which was a different kind of restraint, this is the greatest intrusion on civil liberties in American history."

On October 3, 2020, National Public Radio's Michel Martin interviewed Diana Vaughan and Nick Sherman, two Republican members of the Washington County Commission in Pennsylvania. Both complained about what they saw as the overly harsh coronavirus policies implemented by their Democrat governor: "He violated our constitutional rights, our right to assemble. He violated the rights of businesses under the equal protection clause when he closed their businesses, taking of property without compensation. And he limited the numbers of those who could gather" ("How Trump's COVID-19 Diagnosis …" 2020).

According to Vaughan, the Washington County Board of Commissioners, along with three other boards of commissioners, had taken legal action against the governor.

Under normal circumstances, conservatives tend to be in favor of less government regulation, and it is hard to imagine a more forceful kind of regulation than business shutdowns and stay-at-home orders. As a result, these calls to reopen have a familiar sound, but the COVID-19 edition of these pleas for less regulation are based on the assumption that state and local health orders are the obstacles to economic recovery. But is that true?

SARS-CoV-2 spreads from person to person through the air, particularly in enclosed spaces with poor ventilation and many people. These are now widely understood facts, and many people have changed their everyday behavior in a rational effort to avoid infection. This leads to the obvious question: Are the COVID-19 restrictions causing the economy to tank, or is it simply people's behavior during a pandemic? Is it regulation or free market forces under COVID-19?

Several nimble economists have already started to research this question, and the results suggest that regulations have had only a modest effect on the economy. For example, Austan Goolsbee and Chad Syverson (2020) of the University of Chicago Booth School of Business conducted a study that looked at consumer behavior within commuting zones that crossed boundaries with different restrictions, and they found that consumer traffic dropped 60 percent but that legal restrictions accounted for only 7 percent of the drop. Similarly, a study by Harvard University researchers Edward Kong and Daniel Prinz (2020) published in the *Journal of Public Economics* looked at the effects of several state COVID-19 policies on unemployment claims in March 2020. They found that restaurant and bar closings accounted for 6.0 percent of unemployment claims and nonessential business closures accounted for another

6.4 percent of claims. Other policies, including stay-at-home orders, school closures, bans of large gatherings, and emergency declarations had no significant effect on unemployment claims. So, this study also suggested that state coronavirus public health policies had only a modest effect on the economy:

> The evidence presented here is consistent with a growing set of studies that find that state restrictions do not explain a large share of this economic decline. In the U.S., a number of papers have documented that economic activity began its steep decline prior to the introduction of [state restrictions] … and that it has not recovered in states that have relaxed their restrictions. (Kong and Prinz 2020, 9)

'It's the Virus, Stupid'

If state public health interventions are not the explanation for the downturn in the economy, then we are left with the obvious alternative: it is the virus itself. If you are of a mind to turn a global pandemic into a political issue, it is easy to blame the closing of restaurants, bars, and nonessential businesses for the economic downturn, but the facts don't support that view. Furthermore, you don't have to be a social scientist to see evidence of why the economy will continue to slump until the virus is controlled. Here are just a few examples:

Online food ordering. One of the most obvious signs of the virus's effect can be seen in the way we get our food. Throughout the pandemic, grocery stores never closed. There are restrictions on how we behave inside the store, but for obvious reasons, not a single governor or mayor closed grocery stores. Nonetheless, many people have stopped shopping in person. Meanwhile, Instacart and other food delivery services have shown enormous growth since the pandemic. According to a recent trade report, online grocery shopping had a total of $1.9 billion in sales in August 2019. In March 2020, sales were at $4.0 billion, and they hit a peak of $7.2 billion in June (Bricks Meets Click 2020). Of course, many restaurants have been closed, and everyone is eating at home much more often than before the pandemic. But that does not explain the dramatic shift to food delivery rather than shopping at the grocery store.

Airline industry. Like the grocery store case, airlines are not being strongly affected by government restrictions, and yet they are experiencing devastating losses. According to a report in *Forbes* magazine, the five largest airlines, which collectively account for 73 percent of U.S. air traffic, lost a total of $11.8 billion in the second quarter of 2020 (Reed 2020). Based on what we know about SARS-CoV-2, an airplane seems like a risky environment for the spread of infection.

Some things cannot be changed. Airplanes cannot help but be enclosed spaces. Furthermore, the change that would be the most helpful—lowering the capacity of the flights—has a direct relationship to profits. *Forbes* magazine publishes a master list of airline COVID-19 policies, which was most recently updated on August 31, 2020 (Pokora and Holzhauer 2020). At that time, only five airlines—Alaska Airlines, Delta, Hawaiian Airlines, JetBlue, and Southwest—were blocking center seats. All the other airlines were flying full airplanes. Masks are required, and the airlines are disinfecting cabins and taking other precautions. But it is obvious the airlines are in financial difficulties caused by a lack of demand rather than by government regulation. Many of my friends had plans for international or domestic travel in the spring and summer of 2020, and in the first weeks of the pandemic, they spent hours on the phone or online canceling reservations and negotiating with airlines to get refunds or credits for future travel.

Government regulations have had some effect on the airline industry, but most of that has come from other governments rather than our own. Due to the high rates of infection in the United States, Americans are not welcome in the European Union or the United Kingdom (Brown and Fletcher 2020). Other countries, such as Ireland, will allow U.S. travelers into the country but require a quarantine for fourteen days upon arrival. To state the obvious, it is our lack of control over the virus and not our state and local regulations that are keeping us from vacationing in Europe.

Sports and entertainment. In early October 2020, Regal Cinemas, the second largest theater chain in the United States, announced it would be temporarily closing all theaters in the United States, the United Kingdom, and Ireland (Ravindran 2020). Regal had reopened its theaters only two months

earlier after five months of closures. Sports and entertainment venues have been affected by state and local regulations governing seating and room capacity, and in addition the coronavirus has delayed the release of new films. The Regal decision came soon after MGM/Universal announced it would be delaying the release of the latest James Bond movie to April 2021. But, as in the case of airlines, much of the problem is likely to be the lack of customers. Especially in an age when we have access to endless amounts of excellent entertainment via Netflix and other streaming services, the added benefits of a big screen and surround sound are insufficient to get people out of the house. My local theater is open again, but I don't know anyone who is going.

The National Basketball Association (NBA) created a remarkably successful bubble at Disney World that allowed them to safely complete the 2019–2020 season. The National Football League (NFL) began their season on time, but some games were postponed due to players testing positive for COVID-19. In addition, the Tennessee Titans experienced a substantial outbreak (Pelissero and Rapoport 2020). Major League Baseball (MLB) came back for an abbreviated season, and although several top European players chose not to participate, the U.S. Open Tennis Championships were successfully completed in New York. But in all these instances, there were no audiences in attendance. As a result, all of these sports have experienced financial setbacks.

Broadway remains dark until at least January 2021. Local repertory theaters in my area have canceled the 2020–2021 season, and like several other music venues, the U Street Music Hall in Washington, D.C., has permanently closed due to the coronavirus crisis (Fraley 2020).

All of these sports and entertainment businesses are affected by state and local public health mandates limiting the size of gatherings, but as the research cited above suggests, it is likely that government restrictions are less influential than consumers' rational fears of getting infected. If anyone needed a reminder of the danger of large groups of people, the outbreak at the Rose Garden introduction of Supreme Court nominee Judge Amy Coney Barrett shows the risks. As of this writing, according to the *New York Times*, at least eleven people who attended that event have tested positive for COVID-19, including the president of the United States (Buchanan et al. 2020). There were both outdoor and indoor components to the Judge Barrett event, but the gathering far exceeded the Washington, D.C., fifty-person guideline. Furthermore, very few people wore masks, evidently assuming they were protected by the White House testing protocol. That turned out not to be the case.

The government restrictions are likely less influential than consumers' rational fears of getting infected.

Although not often mentioned, age has been an important factor in the economic impact of COVID-19. By now we all know that younger people are much less likely than older people to show serious effects of COVID-19. But young people differ from older people in another important way: they have less disposable income. Ours is a consumer economy, and as a result, the health of the economy depends on people buying and selling goods and services. Young people are much more likely to be saddled with student loans and other debts and have not yet hit their peak earning years. In contrast, older people generally have greater wealth, fewer debts, and more time to enjoy their financial success. Unfortunately for the economy, many older people are making the completely rational decision to avoid many of the environments where they might spend their money (see the list above). Indeed, at the outset of the pandemic, the U.S. personal savings rate spiked from an average of 7 percent of disposable income to an all-time high of 33 percent (Federal Reserve Bank of St. Louis 2020). Similarly, a recent study shows that many consumers used their one-time stimulus checks under the Cares Act to pay down credit card debt (Coibion et al. 2020), and consistent with that report, Federal Reserve data shows that credit card debt fell sharply in the second quarter of 2020 (Federal Reserve Bank of New York N.d.). More savings and less debt are good for the individual consumer, but they starve the economy of funds that would otherwise be paying for goods and supporting em-

ployees' salaries.

Finally, it is clear from the experience of other countries that it doesn't have to be this way. Ironically, our reluctance to impose severe restrictions early in the pandemic has brought us a sustained weak economy with no end in sight. Other countries reacted strongly and are now enjoying much more freedom and revitalized economies (Kaplan et al. 2020). After the most severe quarantine in history, China has been open since early April 2020. Wuhan nightclubs are full again. New Zealand had a strong and unified response to the coronavirus and went more than a hundred days without community spread. There was an outbreak in Auckland in August 2020 that required the reimposition of a lockdown in the city, but in early October 2020 Prime Minister Jarcinda Ardern announced that Auckland could once again join the rest of the country and enjoy freedom from coronavirus restrictions (Falconer 2020). Thailand has reopened schools, restaurants, and bars, and France reopened restaurants, bars, and cafés in June 2020. A recent uptick in infections has necessitated mandatory mask use in some areas, but for now France remains open (Onishi and Méheut 2020).

The response to the SARS-CoV-2 pandemic has been variable across countries, as have the results of those efforts. But it seems clear that the quickest way to bring an economy back is to beat the virus. On October 5, 2020, President Trump, while suffering from COVID-19 himself, said, "Don't be afraid of COVID" (Kolata and Rabin 2020). The hosts of the radio station I appeared on were urging a similar "tough it out" message. Unfortunately, any businessperson will tell you these are not winning marketing strategies. Imagine a shop owner who makes little effort to make customers feel comfortable and instead simply says, "Suck it up." It is equivalent to saying, "This product is not very good, but you should buy it anyway." In the free market experiment of the coronavirus pandemic, that line won't work. The economy will not fully come back until it is safe to enter the marketplace.

It seems clear that the quickest way to bring an economy back is to beat the virus.

In the 1992 campaign that won Bill Clinton the presidency, political strategist James Carville famously popularized the phrase, "It's the economy, stupid," to identify the most important issue of that campaign. Today, as the economy is suffering the effects of a global pandemic, Carville's line could be revised as "It's the virus, stupid," and it would largely mean the same thing. Removing state and local coronavirus restrictions will not bring the economy back. Only getting rid of the virus will do that. We would all be better off if we could agree to work toward that goal. ■

References

Bricks Meets Click. 2020. Tracking online grocery growth. *Brick Meets Click* (October 8). Available online at https://www.brickmeetsclick.com/tracking-online-grocery-s-growth-.

Brown, Forrest, and Brekke Fletcher. 2020. Find out which countries are welcoming US tourists back. CNN (July 14). Available online at https://www.cnn.com/travel/article/us-international-travel-covid-19/index.html.

Buchanan, Larry, Lazaro Gamio, Lauren Leatherby, et al. 2020. Inside the White House event now under covid-19 scrutiny. *The New York Times* (October 3). Available online at https://www.nytimes.com/interactive/2020/10/03/us/rose-garden-event-covid.html.

Coibion, Olivier, Yuriy Gorodnichenko, and Michael Weber. 2020. How did U.S. consumers use their stimulus payments? *SSRN Electronic Journal*. Available online at https://doi.org/10.2139/ssrn.3675543.

Falconer, Rebecca. 2020. New Zealand 'beat the virus again,' PM Jacinda Ardern says. *Axios* (October 5). Available online at https://www.axios.com/-9290fb75-dff5-43d2-8f9a-3203813e5a29.html.

Federal Reserve Bank of St. Louis. 2020. Personal saving rate. *Federal Reserve Bank of St. Louis* (October 1). Available online at https://fred.stlouisfed.org/series/PSAVERT.

Federal Reserve Bank of New York. N.d. Household debt and credit report. *Federal Reserve Bank of New York*. Available online at https://www.newyorkfed.org/microeconomics/hhdc.html.

Forgey, Quint, and Josh Gerstein. 2020. Barr creates firestorm with comments that appear to boost Trump's reelection campaign. *Politico* (September 18). Available online at https://www.politico.com/news/2020/09/17/william-barr-coronavirus-lockdowns-slavery-416776.

Fraley, Jason. 2020. U Street Music Hall closes its doors due to coronavirus pandemic hardship. WTOP (October 5). Available online at https://wtop.com/entertainment/2020/10/u-street-music-hall-closes-its-doors/.

Goolsbee, Austan, and Chad Syverson. 2020. Fear, lockdown, and diversion: Comparing drivers of pandemic economic decline 2020. *SSRN Electronic Journal*. Available online at https://doi.org/10.2139/ssrn.3631180.

How Trump's COVID-19 diagnosis could affect down-ballot Republicans. 2020. NPR (October 4). Available online at https://www.npr.org/2020/10/04/920175411/how-trump-s-covid-19-diagnosis-could-affect-down-ballot-republicans.

Kaplan, Juliana, Lauren Frias, and Morgan McFall-Johnsen. 2020. Our ongoing list of how countries are reopening, and which ones remain under lockdown. *Business Insider* (September 23). Available online at https://www.businessinsider.com/countries-on-lockdown-coronavirus-italy-2020-3.

Kolata, Gina, and Roni Caryn Rabin. 2020. 'Don't be afraid of covid,' Trump says, undermining public health messages. *The New York Times* (October 5). Available online at https://www.nytimes.com/2020/10/05/health/trump-covid-public-health.html.

Kong, Edward, and Daniel Prinz. 2020. Disentangling policy effects using proxy data: Which shutdown policies affected unemployment during the covid-19 pandemic? *Journal of Public Economics* 189: 104257. Available online at https://doi.org/10.1016/j.jpubeco.2020.104257.

Onishi, Norimitsu, and Constant Méheut. 2020. Beaten back, the coronavirus regains strength in France. *The New York Times* (August 17). Available online at https://www.nytimes.com/2020/08/17/world/europe/france-coronavirus.html.

Pelissero, Tom, and Ian Rapoport. 2020. Titans could face discipline if review finds they did not follow covid-19 protocol. NFL.com (October 4). Available online at https://www.nfl.com/news/titans-could-face-discipline-if-review-finds-they-did-not-follow-covid-19-protoc.

Pokora, Becky, and Brett Holzhauer. 2020. Master list of U.S. airline seating and mask covid-19 policies. *Forbes* (August 31). Available online at https://www.forbes.com/sites/advisor/2020/06/19/master-list-of-us-airline-seating-and-mask-covid-19-policies-/#760b7c7d6690.

Ravindran, Manori. 2020. Cineworld could close all Regal Cinemas, U.K. venues in response to 'No Time to Die' delay. *Variety* (October 4). Available online at https://variety.com/2020/film/global/cineworld-close-us-regal-uk-cinemas-no-time-to-die-james-bond-1234791728/.

Reed, Dan. 2020. Airlines are starved for revenue. The coronavirus spike has quenched chances of a rebound. *Forbes* (July 24). Available online at https://www.forbes.com/sites/danielreed/2020/07/24/airlines-are-starving-for-revenue-the-recent-spike-in-covid-19-cases-has-quenched-a-small-but-much-needed-rebound-in-travel-demand/#580606866de3.

Vyse, Stuart. 2020. COVID-19 and the tyranny of now. Skeptical Inquirer 44(6) (November/December). Available online at https://skepticalinquirer.org/exclusive/covid-19-and-the-tyranny-of-now/.

[SKEPTICAL INQUIREE BENJAMIN RADFORD

Benjamin Radford is a research fellow at the Committee for Skeptical Inquiry and author or coauthor of a dozen books, including *Investigating Ghosts: The Scientific Search for Spirits*.

Do Blinky Batteries 'Prove' Ghosts?

Q: **I've been mulling over a question for years: If batteries are supposed to be drained during ghost investigations because spirits use the electricity to materialize, then why don't these investigators bring van loads of car batteries and fire up generators while they're investigating to give the spirits as much ability to manifest themselves as possible? Have you ever heard of anyone doing this?**

—J. McLachlan

A: The question of why ghost hunters so rarely question their assumptions—much less construct valid experiments to test them—is an excellent one, and the answer reveals much about paranormal investigation in general.

Many theories about ghosts make testable claims and predictions, yet few good scientific tests have been conducted. For example, if an investigator believes that ghosts inhabit a building and also that ghosts give off electromagnetic fields, then logically a "haunted" building should have higher levels of electromagnetic fields than a comparable control building that the investigator believes is not haunted. If an investigator believes that a device can communicate with the dead, there are ways to test that theory. And so on.

Batteries are often said to become mysteriously drained, presumably by ghosts, in haunted locations. Some think it's because ghosts are primarily energy and feed off the batteries to manifest themselves. This idea dates back over a century to the Spiritualist era when mediums—some of them sincere—would insist on conducting séances in the dark to assist the spirits. Another common and related assumption is that cold spots are created when ghosts use ambient air energy to materialize.

Figure 1. New batteries to be tested at a supposedly haunted mansion in Clovis, California, the set for the show *MysteryQuest: Return of the Amityville Horror*. Photo by the author.

Figure 2. The author testing claims of mysterious battery drainage at "haunted" Wolfe Manor, supervised by a decapitated deer. Photo by the author.

There's plenty of speculation and anecdote but little experimentation of this easily testable, verifiable claim. Either batteries in a supposedly haunted location lose their charge more quickly than identical batteries in a control location, or they do not.

I conducted just such a test at the "Haunted" Wolfe Manor in Clovis, California, in 2009 for the television show *MysteryQuest*. I purchased four sets of identical batteries (two each of C and D cells), sealed them in Ziploc bags, and used high-strength plastic tape to wrap them tightly, which I signed to prevent tampering (see Figure 1). I then placed half of them in Wolfe Manor and the other half at another location offsite (see Figure 2).

Twenty-four hours later, I used a battery meter to check the cells' charges; my experiment showed no electricity drainage at all in the "haunted" location batteries. It didn't prove anything, of course. If the batteries had been drained, it could have been, for example, that the batteries at the "haunted" location were defective or for some reason subjected to extreme heat that (intentionally or incidentally) drained the cells, and so on. Had there been an effect, I'd have had reason to replicate the experiment with a much larger sample, stronger controls, monitoring to prevent fraud, etc. In any event, this was a simple experiment that just about anyone could do, yet as far as I know this was the first time that any ghost investigator had tested this claim.

Why is there so little actual scientific experimentation of ghost claims? First, conducting scientifically valid experiments is not easy; it requires knowledge of basic experimental design (such as controls, control groups, and single- and double-blind testing protocols). These principles are not difficult to grasp, but they do require a greater understanding of science and its methods than the average person possesses. Most people have never done a scientific experiment in their lives outside of a few in high school science classes.

Second, of course, controlled experiments are not nearly as much fun as wandering around a haunted house at night with flashlight-lit friends looking for ghosts. Not doing the necessary research is a big mistake, because it is exactly this type of experimentation that *could* help prove that ghosts exist. All other types of evidence—all the anecdotes, stories, legends, orb photos, EVPs, and so on—have been (and likely will remain) inconclusive and ambiguous at best. But if a ghost investigator conducted a series of well-designed experiments proving that there was some measurable difference between a haunted location and a nonhaunted one, that would be valid, scientific evidence to build on.

It's also possible that such tests have been done but never reported because of the file-drawer effect. If a ghost hunter conducts a test and it doesn't turn out how they wanted it to, they can simply abandon it, and no one's the wiser. You can be sure, however, that if a well-designed experiment revealed significant battery drain in haunted locations, it would be widely touted as real evidence for ghosts.

Because there's no significant peer review among ghost hunters (as in most paranormal investigation), there's little incentive to do good research. Ghost hunters on "reality" television shows are (ostensibly) producing *entertainment*, not scientific research. Ghost hunters around the world vary greatly in their understanding of scientific principles, as Sharon Hill noted in her book *Scientifical Americans*. Despite using scientific equipment and claiming to investigate scientifically, they demonstrate little regard—much less enthusiasm—for science.

Though mysterious battery draining is most often claimed to be associated with ghostly phenomena, it's also claimed to occur inside crop circles. Cereaologists have peppered their books and blogs with such "mysterious" accounts but have had just as little inclination in testing these anecdotes as ghost hunters. On the rare occasions when ghost-related claims have been scientifically tested, it's usually by skeptical academics such as Chris French and Richard Wiseman, who have discussed them in their books *Anomalistic Psychology: Exploring Paranormal Belief and Experience* and *Paranormality: Why We See What Isn't There*, respectively. I've spent decades encouraging paranormal proponents from across the board, from cryptozoologists to ghost hunters, to incorporate better science into their research, but I have little reason to think it will happen. ■

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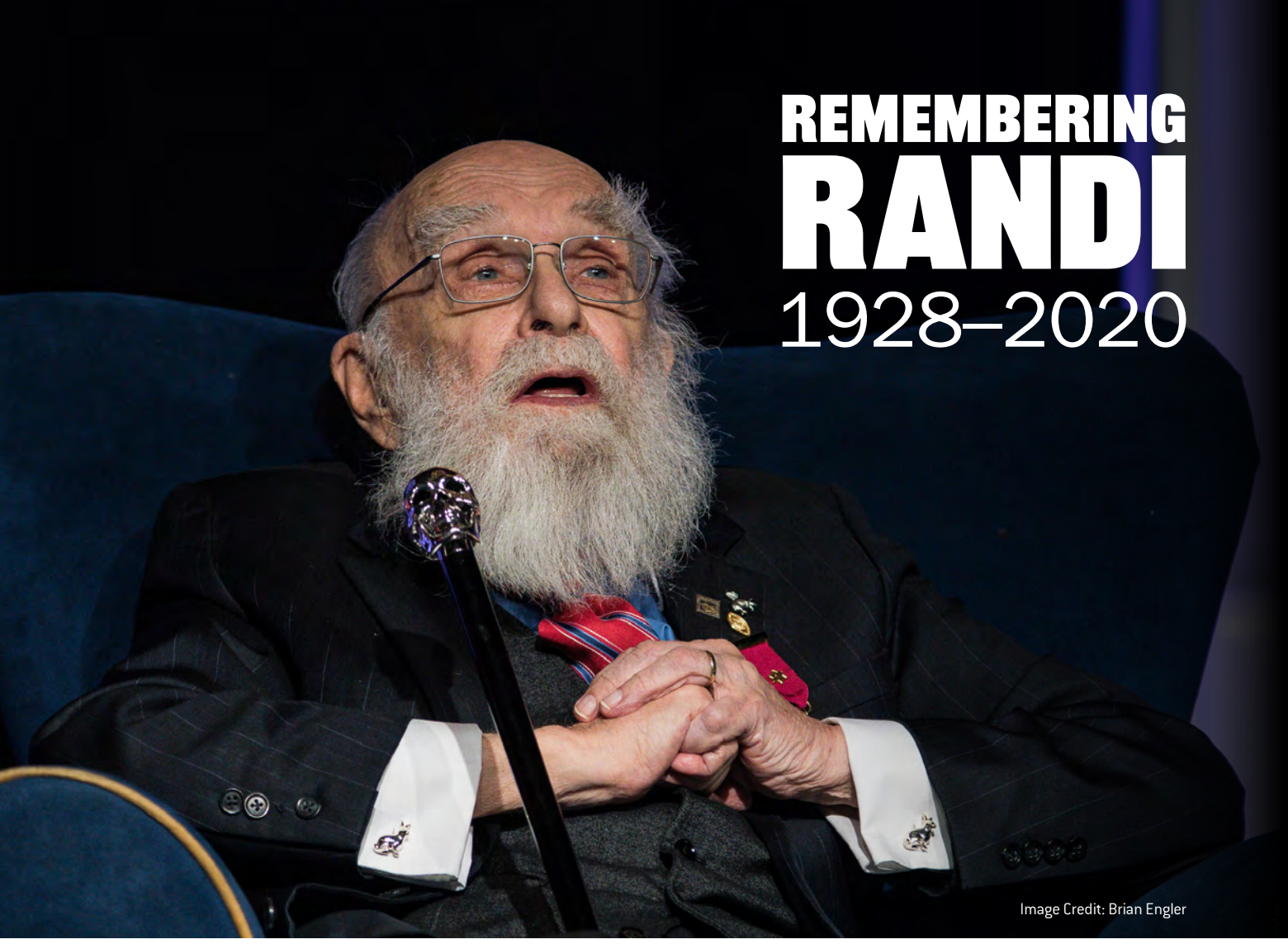

Image Credit: Brian Engler

The Amazing Life and Legacy of James 'The Amazing' Randi

KENDRICK FRAZIER

Perhaps it is fitting that the bad news would come during this already dreary year of a pandemic and a partially shut-down world. Our dear colleague James ("The Amazing") Randi, one of the giants of skepticism and a fierce force for reason and rationality, died October 20, 2020, of age-related causes. He lived to the age of ninety-two and was active until near the end.

Randi was a founding member of CSICOP, now our Committee for Skeptical Inquiry, and an original member of its Executive Council. Through that route and his own indefatigable activities all over the world, he could be considered a founder of the modern skeptical movement worldwide. He was certainly its most visible figure. He had tremendous courage, a vast range of knowledge and skills, and intense determination—qualities all virtually unparalleled in any other single individual—in fighting for science and reason and against frauds and charlatans and pretenders.

The Committee for Skeptical Inquiry, the Skeptical Inquirer, and the Center for Inquiry mourn his death and celebrate his legacy. A CFI statement (see text on next page) said it perfectly: "To the skeptical movement he was a hero. To us, he was family."

Originally a stage-performing magician and escape artist in the tradition of Harry Houdini, an earlier great magician who also exposed psychic frauds, Randi became a scourge to paranormalists, charlatans, and gullible pretenders every-

CFI Statement on the Death of James Randi: 'To Us, He Was Family'

The Center for Inquiry issued this statement October 21, 2020.

We at the Center for Inquiry are heartbroken over the death of James Randi, who died on October 20 at the age of ninety-two.

Randi helped found the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), the organization that would one day become the Center for Inquiry, in 1976, alongside legends such as Carl Sagan, Isaac Asimov, B.F. Skinner, and Paul Kurtz. Together, this group of luminaries from the fields of science, literature, philosophy, and entertainment dedicated themselves to a project that has only grown in its necessity and urgency: the promotion of scientific inquiry, critical investigation, and the use of reason in examining controversial and extraordinary claims.

In other words, these were the founding fathers of the reality-based community.

"James Randi was a founder of CFI's forerunner organization. To the skeptical movement, he was a hero. To us, he was family," said Robyn E. Blumner, president and CEO of the Center for Inquiry. "Damn! And when the world needs him now as never before."

"He had tremendous courage and skill, almost unparalleled, in fighting for science and reason and against frauds and charlatans and pretenders," said Kendrick Frazier, editor of Skeptical Inquirer magazine. "Despite his ferocity in challenging all forms of nonsense, in person he was a kind and gentle man. It is a sad day indeed!"

Well before his association with CSICOP, Randi was the public face of skeptical inquiry, bringing a sense of fun and mischievousness to a serious mission. Whether exposing fraudulent psychics and faith-healers or revealing the false promises of alternative medicine, his showmanship and expertise in illusion made him an extraordinarily effective messenger for the promotion of critical thinking over magical thinking.

Beyond his own groundbreaking work, Randi is responsible for inspiring several generations of skeptics and science communicators who are pushing back against the false claims of pseudoscience, the paranormal, and the supernatural, as well as those who profit from them. What began as a committee of intellectuals and a magazine has now expanded into a universe of activists, scholars, entertainers, media platforms, and institutions, such as CFI, who share Randi's mission and his passion.

The Center for Inquiry is a proud part of the legacy of James Randi. He truly was amazing.

where. He investigated their claims, set up clever traps to see what they were up to, and then publicly exposed them on national TV talk shows, in newspaper reports, in magazine articles, and in a series of memorable books such as *The Magic of Uri Geller* (republished as *The Truth about Uri Geller*), *Flim-Flam!*, *The Faith Healer*s, and *The Mask of Nostradamus*. He later compiled some of his accumulated knowledge into a handy and very readable *Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural.* His large-format book *Conjuring* was called "a definitive history" of the art. It is beautifully illustrated with color posters, including one of his own showing him defiantly standing with broken handcuffs and untied rope. It proclaims: "The Amazing RANDI The Man No Jail Can Hold!"

In his frequent lectures and other personal appearances all over the world he used his sharp wit and showmanship to gain levels of public and media attention that few if any other critics of the paranormal and defenders of science and reason have ever achieved.

For five decades, he was tireless in that role, seemingly ready to go anywhere and do anything to reveal to the public and the media the methods psychic claimants and others were

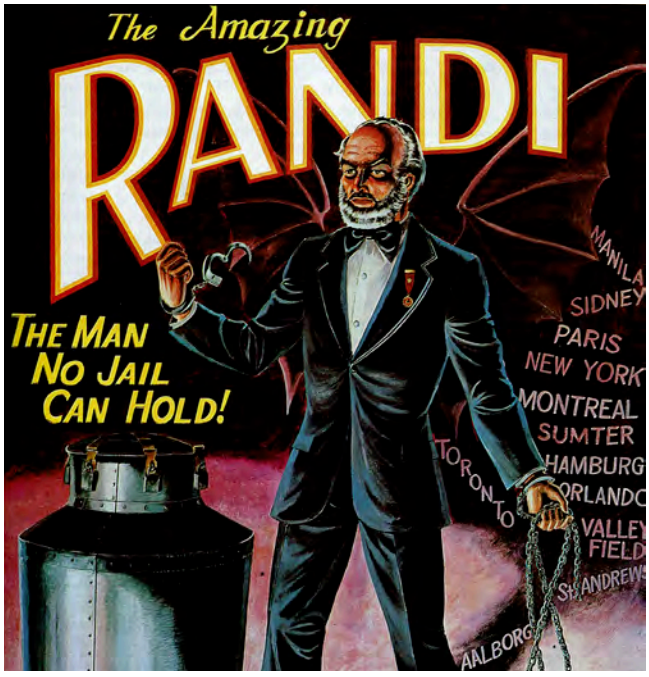

Image Credit: Randi personal collection

Randi and Ken Frazier clasp hands after their on-stage conversation at CSICon 2016. (Credit: Ruth Frazier)

using to deceive people into believing their claimed powers were real. His impact in educating the media and the public to be more circumspect about psychics and all other paranormal claimants is immeasurable.

He was respected by communities of scientists and scholars worldwide who gave him awards and invited him to their universities and laboratories to lecture and teach and demonstrate to them and others how easily all of us can be deceived. Carl Sagan, Isaac Asimov, and Arthur C. Clarke all wrote forewords or introductions to his books—another measure of the respect he commanded.

Randi urged everyone to be skeptical of all extraordinary claims and to demand evidence from the claimant—rarely if ever provided—before proceeding any further.

A brilliant, curious, self-educated genius (indeed, in 1986 he received a MacArthur Foundation fellowship, often called the Genius Award), he was able to show that PhD scientists are among the easiest people to deceive, a painful lesson to some who mistakenly thought their own intelligence was sufficient to catch deception. But he always extolled science and scientific thinking and critical thinking and became a darling of scientists and science-minded skeptics everywhere.

For all his ferocious focus on exposing flim-flam and fraudsters, those who knew him experienced a warm and generous personality. He engendered deep loyalty and love. He had an uncanny ability to make each person he met feel a unique personal bond. Thus he was a personal friend to me, Ruth (my wife), and our family; he had stayed in our home on several occasions, and a few years back we visited him at his home he shared with husband Deyvi Peña in Plantation, Florida. But I know he meant the same for thousands upon thousands of other members of the worldwide skeptical community who loved him. A special and dear human being indeed.

At his popular TAM (The Amazing Meeting) conferences, hosted by his James Randi Educational Foundation, and later at most of our CSICon conferences (as recently as October 2019), Randi would hold court in the hallways and entertain and delight attendees with magic demonstrations, lively conversation, and impromptu photo sessions. He was a celebrity, and he didn't disappoint.

In early December 2014, Randi made a weeklong tour throughout Australia promoting a candid documentary film made about his life and work titled *An Honest Liar* (highly recommended). Randi was particularly well known and beloved in Australia because he had conducted several epic investigations there (one of water dowsers and another of a self-proclaimed—but Randi-planted hoax—"psychic" named Carlos) that gained widespread public attention. At his last appearance at a sold-out theater in Sydney, which I was fortunate to attend, he recalled some of those investigations on stage with Dick Smith, a noted Australian entrepreneur and skeptic who had facilitated Randi's early visits. Near the end, an audience member asked Randi a question about a situation most skeptics experience: How do you respond to a friend who ardently believes in ideas and claims that scientists and skeptics know is nonsense? Randi paused thoughtfully for a long time. He then softly whispered, "Be kind. Be kind." He explained that they *need* to believe. Be compassionate, he said. Randi, at the time eighty-six, then noted that this appearance might well be his last ever in Australia. "Goodbye, Australia," he said. There wasn't a dry eye in the house.

Image Credit: *An Honest Liar*

At another time several decades earlier, in London, Randi and the rest of the CSICOP Executive Council were having lunch at a London hotel dining room during a conference with British skeptics. Randi was bending spoons and forks and doing all the other tricks he loved to do in such settings, while proclaiming about the malfeasance of supposed psychics. My wife and I, and soon Randi, noticed the waiter standing nearby becoming very agitated. It soon became clear the waiter's concern wasn't over the bent cutlery; it had something to do with his deep-seated beliefs he saw being challenged. He was shaken. Randi got up, went over to the man, put an arm around him, and spoke quietly to him, privately. We never quite knew what he told the man, but it was a moment of deep compassion I will never forget.

Yet Randi was iron-willed and innovative in his cleverly devised investigations and stings. After aviation pioneer James McDonnell funded the establishment of the McDonnell Laboratory for Psychical Research at Washington University in St. Louis, a well-respected university, Randi saw it as an opportunity to test two major hypotheses. One was that no amount of funding to parapsychological researchers would make them able to conduct proper research, because the problem lay in their pro-psychic bias. The second was that parapsychologists would resist accepting expert conjuring assistance in designing their experiments and therefore would fail to detect various kinds of simple magic tricks.

Thus was created Randi's soon-to-be-famous Project Alpha.

Randi arranged to have two young conjurors, Steve Shaw (now Banachek, a CSI fellow) and Michael Edwards, write the lab and proclaim psychic powers. The director, physicist Peter R. Phillips, accepted them even though they were still teenagers. Randi sent Phillips a list of eleven caveats, things to watch for in such tests. He also established a series of ethical protocols, including the proviso that if they were ever asked if they were using tricks, they would immediately admit to it.

From the very beginning, the researchers ignored the rules Randi had suggested. The two "gifted subjects" started running the experiments themselves and of course achieved remarkable results. When all this was eventually exposed by Randi, it was a tremendous embarrassment to the lab, the university, and to psychical research generally. And a lesson for all. (See Randi's two reports on "Project Alpha: Magicians in the Psi Lab" in the Summer and Fall 1983 Skeptical Inquirers.)

In 1988, CSICOP decided to send a small delegation of its Executive Council to China to test qigong masters, various psychic claimants, and especially a group of so-called "psychic" children who were then gaining international acclaim. Our invitation came from Lin Zixin, then editor of *Science and Technology Daily*, a daily science newspaper in Beijing, who had become greatly concerned about how these reports were being credulously accepted. Our founder, Paul Kurtz, led the delegation with James Alcock, Philip J. Klass, Barry Karr, and me, but Randi was clearly the star.

Wherever we went, Randi helped quickly devise controlled

Randi cuts open a test matchbox as Paul Kurtz assists and one of the Chinese "psychic" girls watches, in Xian, China, 1988. (Credit: Ken Frazier)

tests so we could see what was going on. The qigong master's powers seemingly to influence the movements of a nearby woman worked at first, when she could see him. When we placed her in another room where she couldn't see him and kept careful records in both locations, their motions went totally out of phase. She had been responding only to what she saw him do; when she couldn't see him any longer, it didn't work. There was no transmission of "qigong" energy.

A policewoman who said she could see inside people's bodies like an X-ray and determine what was wrong couldn't do it (surprise!). When we invoked the simplest control, she was befuddled.

But the psychic children were a marvel. We visited them in the city of Xian in China's interior. The young children, girls and boys, were charming, appealing, and energetic. Among other things, they could supposedly change the colors of match heads inside sealed matchboxes using only the powers of their minds. Randi let them do their thing on their own at first. Their mentor, Mr. Ding, smiled but exerted no controls. They took the match boxes and, to our utter amazement, ran down the stairs and out of the building and disappeared! They apparently gathered in a park somewhere. When they returned forty-five minutes later, the matches had changed as promised. Wow! But it was clear to us that the boxes had been tampered with, and we could even see blades of grass beneath the tape we'd applied. Once Randi instigated controls, such as carefully taping the boxes so that removal of the tape would be obvious and not letting them leave our sight, no more miracles happened. It was clear that their naive mentor, Mr. Ding, had no idea how to conduct a controlled experiment and was merely facilitating their playful chicanery.

Randi carried out all these demonstrations with his usual skill and flair. And, as Barry Karr also recalls, it was a mar-

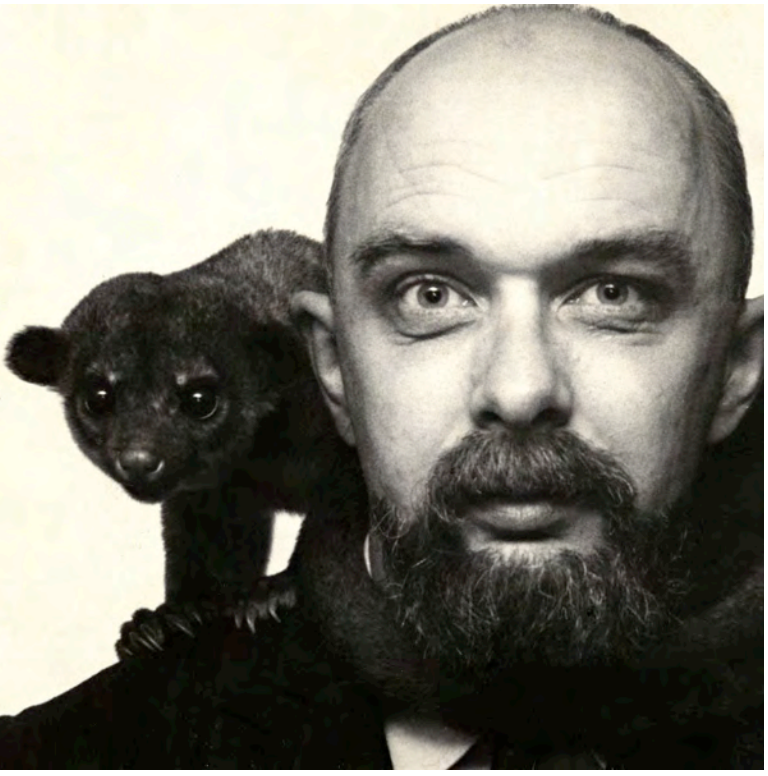

Image Credit: *An Honest Liar*

vel for us to watch the reactions of people on the streets of Beijing and elsewhere as they would see the dramatic, long-bearded, dark-hatted, smallish visage of Randi walking along next to the extra-tall Jim Alcock. The whole trip was exciting and revelatory to us, and it was such a pleasure to see and be with Randi in action, over nearly two weeks of testing paranormal pretenders.

It has been like that for four-plus decades. Randi was such an extraordinary character, a dynamo, so full of energy … and so determined to not let paranormal pranksters go unrevealed. Executive Council meetings could be exasperating for chairman Paul Kurtz because Randi, with no interest in financial spread sheets or administrative concerns, could not sit still long without entertaining us in some way. All lunches and dinners were the same. No one who ever met Randi would forget him; that's just the way he was. Now only in our memories.

His legacy to science and reason, to rationality and common sense, to questioning our own perceptions is on the same level with those of great scientists who teach us something new and important about the world. Randi did that regularly in his own unique, often wildly entertaining, and, yes, amazing way. ■

We have invited a few noted skeptics and magicians to briefly share their thoughts and tributes. Those not included in these pages may appear in our next issue. In addition, we invite others to share their reminiscences as well. Randi meant so much to so many people all across the world.

Kendrick Frazier is editor of the Skeptical Inquirer and a longtime member of the Committee for Skeptical Inquiry Executive Council.

Randi at NECSS in 2017. (Credit: Brian Engler)

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Magicians, Skeptics Share Their Memories of James Randi

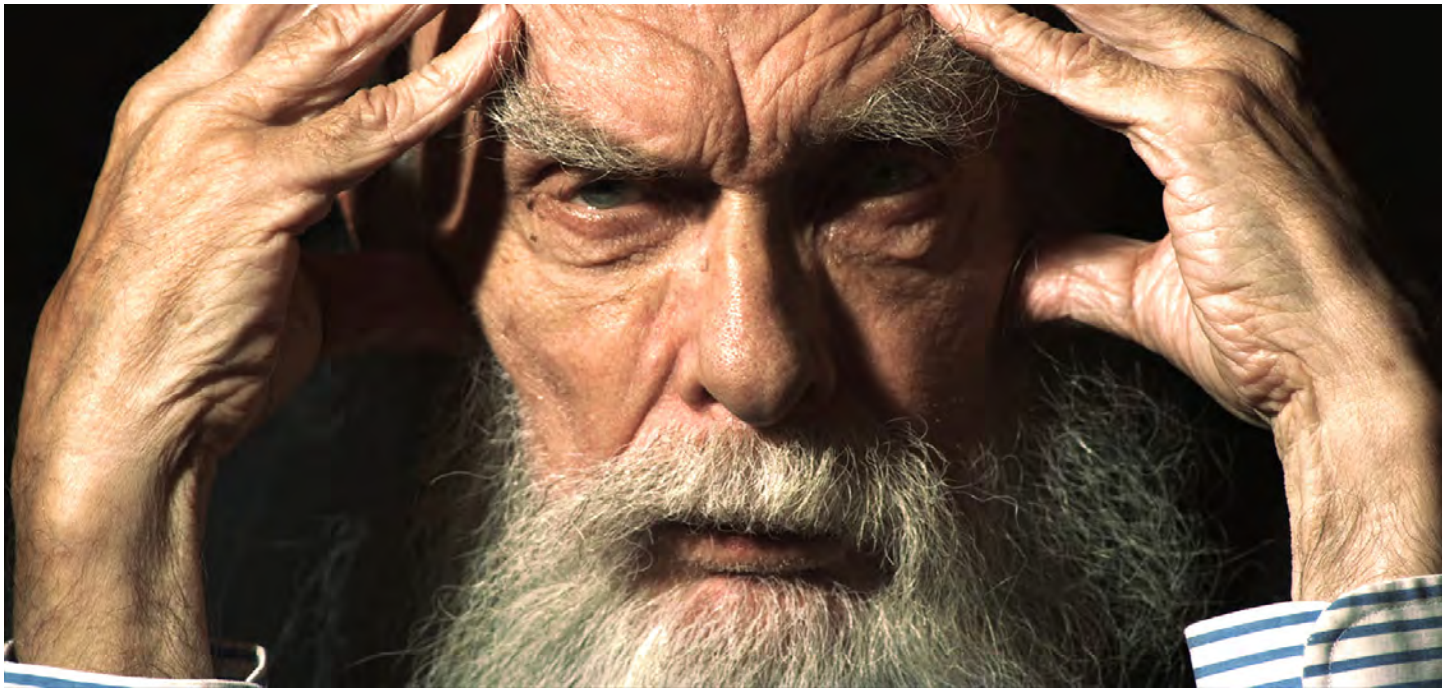


Image Credit: *An Honest Liar*

PENN & TELLER

Randi proved so much.

Randi proved that you could be a magician and be honest. He proved that a conjurer could respect knowledge and people enough to get consent before thrilling them with gloriously fake miracles. You have to be more skilled to do magic honestly, and Randi was that skilled. Randi's first obsession was magic. The latter part of Randi's life was spent helping the world see through those who prey on grief and false hope, but he never lost his magic chops. He could fool anyone, anytime, anywhere. Randi was a great magician.

Randi proved that we all have to work together toward understanding our universe. We need experimental scientists to invent and follow protocols. We need theoretical thinkers who can create ideas to try to explain what we observe. And we also need streetwise scholars who can educate us in the ways of liars and charlatans and magical tutors who can school us in all the ways we can accidently fool ourselves. Randi shared his erudition even with people who were reluctant to learn. He was always helping get to the truth.

Randi proved being a skeptic is fun. The skeptical community into which Randi came was full of serious scholars. Excellent scientists but not really showmen. Randi convinced the world that the skeptical approach is a *blast*. He wrote and performed with joyful, stinging, defiant wit. He gave skepticism all the fun and romance of a daredevil magic show. He showed how advocating science can be wicked fun, rebellious, full of high adventure, spy-movie derring-do, and laughs.

Randi proved you could be skeptical without ever being cynical. Randi never hypothesized the worst in people. He never gave up on humanity. He didn't believe in evil. He trusted and he loved. He was always kind.

Randi was the world's most famous skeptic, but he was never skeptical of love. Randi knew it existed, and Randi's whole being proved it. Love was in Randi's eyes and his smile. Randi had love enough for everyone.

Randi is now proving that we can all live on after death. Our hearts and minds will stay full of Randi until our last breaths. Penn's children's lives are better for knowing and loving Randi. There are many thousands of us who shared Randi's life directly. And there are many millions more whose world was made better by Randi in every medium. That won't stop. His wisdom, genius, and love will live on for a good long time.

Randi proved to us that we really *can* make the world better. He did it.

QED.

MASSIMO POLIDORO

The first time I read about James Randi, I was so impressed by his feats that I thought: "This man is so incredible; he can really make a difference!" I was fourteen, and I could not imagine that in a few years Randi would make my own life completely different, allowing me to pursue my passions and help me make my dreams come true.

I became Randi's apprentice, and working with him every day meant that I was exposed to hundreds of incredible stories and anecdotes, dozens of psychics tested, mysteries investigated, and of course countless "fights" and quarrels with charlatans and frauds. I was there when Randi and Geller openly met for the first time, in Los Angeles, and I was there when legal obstacles were thrown at him, trying to stop him—fruitlessly, of course.

I got a priceless, personal tutoring that could not be obtained anywhere else. But it was not just my personal Yoda that I had found. From the beginning, Randi was like a second father to me. He taught from example. He did not give long lessons; instead, I learned by watching him act and behave and by helping him every day with his research and investigations.

Among the many things I learned from him, one of the most resonant is probably the importance of self-confidence. If you don't believe in yourself, probably nobody else will.

I was not satisfied to "simply" become an investigator of mysteries. I also wanted to be a writer, but it was something that seemed too big for me. I thought you had to be older, more experienced, and far more educated than I was to write books.

"You know that I dropped out of school, don't you?" was Randi's dry observation to my self-deprecating comment.

"Yeah, but you were a child prodigy!"

"So? I had to learn to write, like anyone else. And you can do it too. Just choose something that fascinates you and learn all you can about it. Afterwards, you will see that writing will become a necessity."

Randi and Massimo Polidoro. (Courtesy M. Polidoro)

He was right, of course. While living and working with him, I amassed considerable information on Spiritualism, a subject that captured my imagination, and I needed to put it in writing if I wanted to see some order in it.

"Don't make it too complicated," Randi warned me. "Just pretend you have to explain it all to your grandmother, and everything will be fine."

And that's how my first book was born. It would be followed in the next thirty years by fifty more. Thanks to Randi's encouragement, I was able to turn writing into a profession.

That is just one small example. I have dozens of other similar stories, as well as testimonies from many others in the world whose lives were improved thanks to Randi's care for others and his altruism.

Randi was not only the founder and the leading light of modern skepticism but a man who really made a difference, for the better, in the lives of those lucky enough to meet him. Except, of course, for the charlatans …

We are all going to miss an extraordinary man, someone who was larger than life and a living legend. The one I will miss the most, however, will be the mentor, the friend, and, above all, someone whom I could never thank enough.

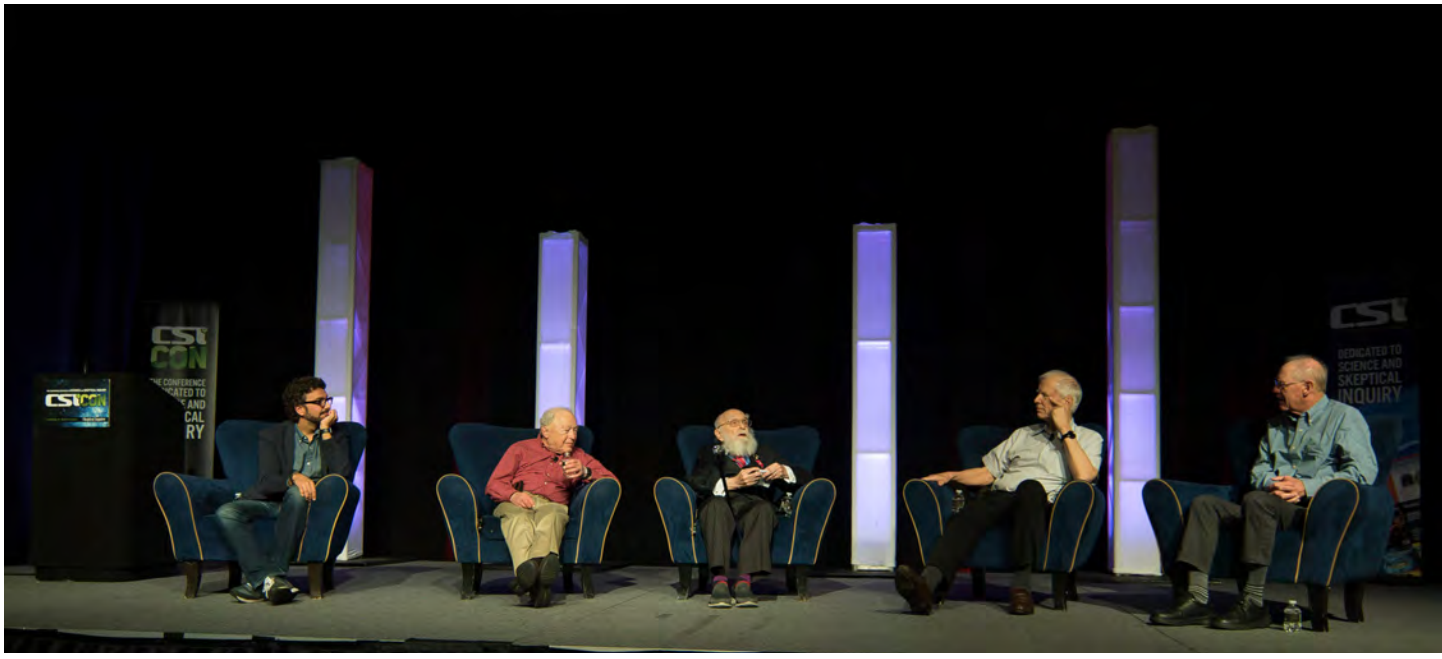
We are certainly going to miss a living legend who contributed to making the world a better place. But as far as I am concerned, I am saying goodbye to an extraordinary man who was a mentor, a friend, a close relative, and, above all, someone whom I could always trust.

Thank you, Amazing.

JAMES ALCOCK

It is 1976. The lecture hall at SUNY Buffalo is packed. The lecturer, a short man with a powerful voice, is at the podium performing astounding feats. Minds are read; spoons bend themselves; contents of sealed envelopes are divined. All this, we are assured, is accomplished through trickery like that used by "psychic" Uri Geller. Suddenly, a spectator rises to his feet and angrily shouts, "You're a fraud!" The lecturer, unfazed, responds, "Yes, I'm a cheat and a charlatan. Everything I am doing is by trickery; I am a conjurer playing the role of a magician." "That's not what I mean," counters the heckler as his wife tries desperately to pull him back into his chair. "You're a fraud because you're pretending to use trickery but you're using psychic powers and won't admit it." The speaker was, of course, Randi. And the heckler? A respected SUNY professor. What could be more fitting for the founding meeting of the Committee for the Scientific Investigation of Claims of the Paranormal than this demonstration of the polar opposites of belief?

This was my first encounter with the Amazing Randi, and he most certainly lived up to his adjective. Little did I know that I would interact and travel with him many times over



Massimo Polidoro, Ray Hyman, Randi, Jim Alcock, and Ken Frazier at CSICon 2018 session "The Untold Stories of James Randi." (Credit: Brian Engler)

the following forty-four years, laying down many delightful memories, including these:

Another conference and a discussion in Randi's hotel room. A distinguished philosopher, having just come from a session focused on exposing irrationality, wonders aloud how people could be so gullible as to believe in psychic powers. Randi quietly hands the man a Gideon Bible, averts his eyes, and asks him to choose from it any word. The man complies. The book is closed, and Randi hesitantly, as though stretching mentally into the psychic realm, writes a word on a piece of paper. The philosopher is asked to name his word and is visibly startled when it matches what Randi has written. He is clearly agitated to the extent that he announces that what he has just witnessed is impossible, and he is forced to the sudden realization that psychic powers are real after all! It takes a while, but Randi finally persuades him that he has witnessed only trickery, adding, "Now you understand how even very intelligent people can come to believe in the paranormal." Teachable moment; lesson learned; calm restored.

Another tale: This time at the Institute for Chinese Medicine in Shanghai where researchers ply us with accounts of paranormal influence on bodily functions. Randi brings the discussion down to earth by requesting that they take his pulse. They are shocked to report that he has no pulse! (Some will recognize the ball in the armpit maneuver.) The conversation immediately shifts from paranormal claims to a serious discussion of the hazards and difficulties of testing paranormal powers. No longer a target of persuasion, Randi is now the teacher.

And one more: It is a Parapsychology Association conference in Dallas. I attend with Randi and Ray Hyman, and our initial reception is decidedly chilly. Randi has been invited to speak about Tina Resch, a teenager whose reported poltergeist experience is attracting worldwide attention. Randi presents a frame-by-frame analysis of TV footage that captured the flight of a telephone supposedly launched by the poltergeist. Widespread applause from the parapsychologists follows his convincing analysis of the movement of the curls in the telephone cord that clearly demonstrates that the power behind the toss must be Tina herself. Another lesson well-taught.

Yes, Randi was many things, but he was also a great teacher. He made time for everyone and was never "off duty" in teaching about how easy it is to be deceived, and he did so without making people feel embarrassed or diminished. I have watched him talk to children with no hint of condescension, and I have watched Nobel laureates giggle like children as he performed conjuring effects while cautioning them about the waves of irrationality sweeping the world. He was a living manifestation of Kipling's advice to "talk with crowds and keep your virtue/ Or walk with Kings—nor lose the common touch." His contribution to teaching will live on. Tell students about psychic surgery—*ho-hum*. Show them a video of Randi performing it, and the enthusiasm is palpable. Describe the deceptions of evangelical faith healers—*yawn*. Show the video of Randi's exposure of Peter Popoff, and they sit up and take notice.

And Randi was also a proud man. Proud of his craft, proud of his intellect and ability. And proud to have exposed charlatans such as his nemesis Uri Geller. And so one more story: Yet another conference, at lunch in the hotel dining room. Randi has been performing some magic for fellow diners when a nearby waiter expresses his astonishment, adding that he has only ever seen one other person do anything more astounding. "Who?" Randi asks. "A man who stayed here last year, a Mr. Uri Geller." Like Popeye after swallowing a can of spinach, Randi is energized, and the miracles begin to flow! The waiter is overwhelmed; the table mates delighted.

I leave the dining room before Randi's show of compassion

toward the waiter as Ken Frazier has described in his article. A little later while passing through the lobby, the dining room manager approaches, having recognized me as having been at the table with Randi, and asks me to follow him to the kitchen. And there is the waiter, sitting on the floor against the wall, head in his hands, shaking and softly moaning. It is a dramatic sight. He tells me that he has just witnessed black magic, the devil's work, and is very frightened. My attempt at calming him through assurance that the "man at the table" is "just a magician" goes nowhere. He has seen magicians before, and they did not do black magic. I struggle to offer support, telling him that this is no ordinary magician but the "best magician in the entire world!" Only then does he begin to calm down. "The best magician …?" he murmurs. As I leave the kitchen, he is on his feet, grasping my hand in both of his and thanking me, relieved that the "man at the table" is not a partner of the devil! A chilling demonstration of the human vulnerability that psychics relentlessly exploit. Imagine the success Randi could have had as a "psychic." Fortunate for us all, he chose a different path.

All who knew Randi no doubt have significant memories of their own. And those who knew him well will remember a man who dominated every social gathering by virtue of his charisma, his intelligence, and, yes, his conjuring. He traveled the world to challenge psychics and to lend his expertise and reputation to encourage and assist emerging skeptical groups. He was self-educated in the canons of science, but I never once heard him claim more expertise than he possessed; he carefully respected his own limits. His genius lay partly in coming up with simple, convincing tests of psychic powers that did not require complicated control groups or statistical analysis. For example, if someone claims to be able to see luminous auras surrounding the human body? Forget fancy thermal imaging or other complex approaches. Simply blindfold the psychic, lead her into a darkened lecture hall where a few people are seated, remove the blindfold, and ask her how many people are in the room!

Randi grew up only two blocks from where I live, and now that he is gone, he often comes to mind as I walk the same streets that he walked and visit some of the same shops where he would have shopped. His was a life well-lived. He has left the world a better place than he found it, and I have no doubt that a century from now his name and his accomplishments in combating irrationality and pseudoscience will reverberate alongside those of his idol Harry Houdini.

Well done, Randi. It was a privilege to know you and to be your friend.

JAMY IAN SWISS

When I was a very young boy, I used to watch a favorite children's television show every Sunday afternoon called *Wonderama*, a weekly four-hour marathon hosted by a delightfully warm and playful host by the name of Sonny Fox. One of the periodic highlights of the show for me was a performance by a magician who, looking suitably Mephistophelean in his black moustache and goatee, went by the moniker of The Amazing Randi. Little could I have guessed that someday that inspiration would eventually lead me to a career—in fact, several parallel careers—following in Randi's footsteps as a magician, author, and skeptic.

Jamy Ian Swiss and Randi with Martin Gardner in Oklahoma. (Courtesy J.I. Swiss)

In 1975, I read a book titled *The Magic of Uri Geller*. That Geller was a fake, doing sleight of hand and passing it off as psychic powers, was not a news flash to me, a natural-born skeptic in love with science as well as magic, endlessly fascinated by the first stories I read in my boyhood of Harry Houdini busting phony spirit mediums in the nineteenth century. But Randi's book had a profound impact on me by making me aware of the fundamental immorality, and the predatory harm, wreaked by phony psychics such as Geller and others of his slimy ilk. The book forever radicalized me, as it did others of the time—such as my future friend and colleague Banachek. My innate skepticism was now destined to a life of skeptical activism.

That path would first come to fruition when, in 1987, I would become one of the founding members of the National Capital Area Skeptics (NCAS), a group that remains active today. (Twenty years later, I would similarly cofound the New York Skeptics, and today I serve as vice president of the San Diego Skeptics Society.) By 1990, NCAS's size and success would lead to its being chosen to help host that year's annual CSICOP conference. I had met Randi previously at a national CSICOP conference, but it was at the D.C. gathering that we bonded not only as skeptics but also as magicians. During the course of the convention, I arranged a conference room gathering of magicians—including the legendary Jerry Andrus—to share in a typical magic "session," in which we passed a pack of cards around the table and everyone performed something for the group.

From then on, Randi and I would spend many years together engaged as both colleagues and friends, in countless

shared experiences and adventures. One of my first national television appearances was in a 1993 episode of *Nova* titled "Secrets of the Psychics," which featured Randi and in which I briefly appeared performing a feat of apparent psychokinesis.

One unforgettable such adventure was the day Randi called and said, "I'm going to Oklahoma to visit Martin Gardner. Want to come?" I'm not sure humans have yet invented technology that could accurately measure the rapidity of my response. I had performed and presented at the Gathering for Gardner (G4G) conference many times, and I was thrilled at the prospect of meeting another hero, who was also one of Randi's closest friends, with whom he almost unfailingly spoke weekly. And so I did indeed travel with Randi and spent a couple of days visiting with Martin Gardner. And yet again, meeting not just as skeptics and science buffs but as fellow magicians, Martin and I had the chance to break out a couple of decks of cards and share a memorable "session."

Upon the eventual formation of the James Randi Educational Foundation, I would serve as the first person to ever stand on a stage as host and say, "Welcome to The Amazing Meeting!" at the very first conference in 2003 in Florida. Through the next twelve years, as the conference moved to Las Vegas and progressively expanded in size and ambitions, I would be present for every TAM save one, presenting onstage talks, performances, and workshops and taking part in the half-dozen live Million Dollar Challenge (MDC) tests that typically concluded those conferences. I also created an annual onstage conversation with Randi, in which we would focus on one of countless aspects of Randi's storied career, from his days as an escape artist and magician, to his years of confronting Uri Geller, to his knockout hoaxes—including Project Alpha, Carlos, and the taking down of televangelist Peter Popoff—and even revisiting his time spent touring with rock star Alice Cooper. At TAM, Randi presented me as the second recipient of the James Randi Award for Skepticism in the Public Interest, and subsequently I was made a senior fellow of the foundation in 2013.

The first time I stood on stage at TAM with Banachek to host the Million Dollar Challenge, I distinctly recall the sensation of looking out and seeing Randi in the front row and how strange, and weighty, and remarkable a moment it seemed to me. I was following in my mentor's footsteps, a responsibility and privilege I never took lightly. And I never took any event more seriously than in 2011 when I traveled to New York City to assist Banachek in conducting a special one-time version of the MDC for ABC Television's news program *Nightline*. The MDC committee had created a unique set of one-time protocols for the testing, and the pressure was enormous. The result was an unusually skeptic-positive broadcast.

When the exhausting and stressful TV shoot was finally completed for *Nightline*, I dialed Randi's cell phone from my own. "The million dollars is still safe," I told him. "What's that?" Randi asked. I repeated my relieved pronouncement. "It's done. And we didn't lose the million!" "What do you mean?" is all I heard in return. I tried one more time. "Randi,

Image Copyright Deyvi Orangel Peña Arteaga

the test for *Nightline* is done!" There was a short pause, and then: "I'm just screwin' with ya." I was stunned into momentary silence—and then laughed for a very long time. Randi was ever a magician, and skeptic, and intellect, and crusader. But he was also at heart an inveterate prankster, and he had caught me cold.

I came to know Randi in his many roles and lives. I was invariably thrilled when the phone would ring and a voice would quietly announce, "It's Randi." Even when I was alone, I would feel tempted to look to someone else in the room and whisper excitedly as I pointed to the phone: "It's Randi!" And that call often meant that he had just arrived in town, and it was time to go meet him at his favorite deli for conversation and a pastrami-on-rye. For all of our shared skeptic ventures, at the core of our relationship Randi and I were magicians, and we could just as easily fall instantly into a conversation talking shop about that endless subject as we could about skepticism and science and psychic scams and so much else that was of infinite interest to his boundless curiosity.

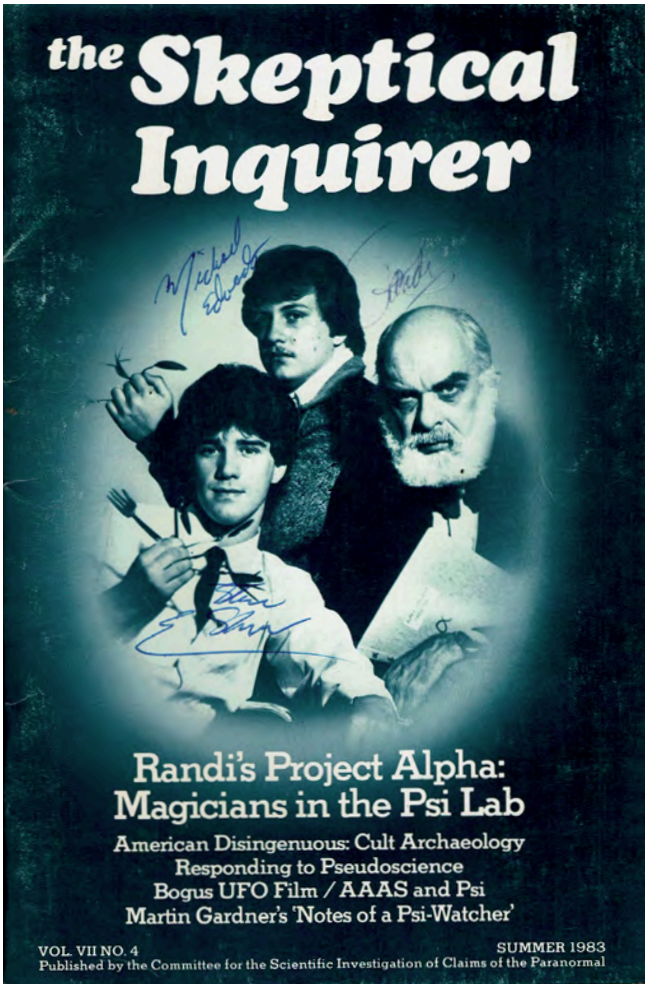
Of the countless memories I have of time spent together with him, one of the best was an entire day together, the two of us strolling around Manhattan visiting magic shops and other magic-related sites, including a rare poster restoration shop that one of us had connected with, and we simply went to have a look and see what we could see and learn. We spent much of that afternoon just sitting on a couch in the historic Flosso-Hornmann Magic Shop, America's oldest magic shop, which had once been owned by Houdini. Randi and I spent hours that day chatting about magic and sharing stories with owner Jackie Flosso, son of Al Flosso, a legendary magician and old friend of Randi's. And that was our day: just roaming Manhattan, talking magic tricks and tales. When I think back on it now, it might have been one of the best days of my life. And without doubt, one of the best, of so many, spent with James Randi. Without him here, the world is now left a little less amazing.

CHIP DENMAN

It was 1976. My first year of graduate school. One fall evening I was studying in the library—or, more correctly, I was avoiding studying—when I came across a paperback: *The Magic of Uri Geller.* The back cover pictured the author: a wild-eyed, scary-looking, white-bearded magician, James "The Amazing" Randi. Until then, everything I had read about parapsychology was either completely credulous or was politely skeptical in that "answer hazy … further research needed" academic kind of way. This book was different. Randi spoke from his deep expertise as a magician—a professional deceiver—and called bullshit on all these "psychic" tricks. I'd dabbled as an amateur magician, and I was also getting serious about a career in math and science. Randi's words clicked with everything I had learned about magic *and* science. I had a new hero! And a lesson: tell the truth as you see it; call bullshit if you need to.

It was 1986. I was doing biostatistics and epidemiology at the National Institutes of Health. My wife, Grace, and I had made friends with some of the performers at a local magic-themed nightclub, especially Jamy Ian Swiss. We discovered that we shared a mutual hero: James Randi. That amazing guy had inspired in us an attitude of scientific skepticism, the idea that extraordinary claims should require extraordinary evidence. I was a professional scientist with an amateur's interest in magic; our new friend was a magician with a love for science. And we three were avid readers of a little—literally; it was still digest-sized—magazine called Skeptical Inquirer.

One night over dinner (alcohol must have been involved) we resolved to start a group in the D.C. area with a skeptical focus. We wrote to the publishers of Skeptical Inquirer, who kindly put us in touch with a couple of others who had also written and helped us to reach out to SI subscribers in the area. We had no idea what we were getting into, but we were fired up around a shared vision inspired by Randi. In March of 1987, the National Capital Area Skeptics (NACS) held its inaugural meeting. Over 200 showed up. Since then, Grace and I have each served as president, and we continue



Randi's Project Alpha SI cover, signed by all three participants. (Credit: Ken Frazier Collection)

on the NCAS board. If not for Randi, that group would not have come to be. And we had not even met him yet. Almost immediately after the group was formed, I traveled to my first CSICOP conference in Pasadena, California, where I finally met our hero. Wow.

Over the next few years, especially during the time when Randi was fighting lawsuits brought by Geller and others, we came to be friends. Those were the days when he'd call to tell me about a trick or something super-secret he'd just learned about Geller. I'd be excitedly pointing at the phone and mouthing to Grace, "It's Randi! It's Randi!" And after, we'd laugh and wonder how many others he'd called with that super-secret scoop.

It was 1996. A generous benefactor came forward to create the James Randi Educational Foundation, to help Randi remain a thorn in the sides of fakes and phonies. Grace and I went with Randi to meet this person who had stepped forward just when Randi needed that kind of boost. Not long after, Randi was able to take his well-known challenge to the next level: the foundation put up $1 million for anyone who could demonstrate a paranormal ability under mutually agreed upon scientific test conditions—and it's still there. I became Randi's statistical consultant for these tests to help keep the money safe from cheats and lucky guesses. A few years later, he asked me to join the foundation's board of directors.

Randi's charm and charisma were the crazy glue that connected so many people around the world. In the days following his death, I've seen an outpouring of emotion on social media, with many saying that they made lifelong friends because of Randi and The Amazing Meetings. That's our story too.

After Randi retired from active involvement in the foundation, we felt the best way to honor his legacy was to award grants to others who were doing the kind of work that Randi would have supported. Since then we have awarded Susan Gerbic and her tireless editors who keep Wikipedia honest, Dr. Jen Gunter who is to Gwyneth Paltrow's Goop as Randi was to Geller's bent spoons, and others actively promoting

A Randi Reader

Selected excerpts from Randi's books:

"I am not so much concerned with the perpetrators of the major hoaxes as I am with the strange and unexpected ways in which these hoaxes become accepted by [a] small minority of scientists."

Flim-Flam! (1982, p. 1)

"Parapsychology is a farce and a delusion, along with other claims of wonders and powers that assail us every day of our lives."

Flim-Flam! (1982, p. 326)

"Throw away the Tarot deck and ignore the astrology column. They are products offered you by charlatans who think you are not the marvelous, capable, independent being you are."

Flim-Flam! (1982, p. 326)

"I am pleased to see that whatever was presented in *The Magic of Uri Geller* as speculation has been validated in the years since. … There are those who will continue to believe that in the 1970s science validated the powers of an Israeli psychic; those who read this book and *Flim-Flam!* will know otherwise. The public can be deceived for a while, but truth is annoyingly persistent."

The Truth about Uri Geller (1982, pp. 226–227)

"This book is being written by an angry man. It is a cry of outrage against a wrong that needs to be righted. People are being robbed of their money, their health, and their emotional stability."

The Faith Healers (1987, p. 5)

"Though it is not widely accepted or even well known to the public, it is a fact that no occult, paranormal, psychic, or supernatural claim has ever been substantiated by proper testing."

An Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural (1995, p. xvi)

"Psychics, cult members, and fringe-science folks often say that their claims and ideas cannot be examined by regular rules and means. … Most importantly, these folks insist that their tenets can only be properly examined by persons who believe them—in advance of any examination—and who do not hold any skepticism concerning the subject. This is not a condition under which the truth is apt to reveal itself."

An Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural (1995, p. xvi)

"If I sound rather less than credulous concerning some subjects, that is due to long-term familiarity with the field. I may not offer soft and gentle treatment where it is not deserved. Some notions are just too childish to merit kindness."

An Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural (1995, p. xvi)

science, science education, and skeptical thinking.

Randi changed our lives and the lives of many, many others. I hope that through the foundation that he will continue to change the world.

BARRY KARR

I want to tell Randi stories. I want to sit around a table at a bar, maybe at the end of the day at some conference with a group of Randi's friends and fans, make a toast to the amazing one, and tell stories until we laugh and cry and get thrown out at closing time. So bear with me now. I am going to order another round and take my turn …

It's 1983, and there is so much commotion going on in the dumpy little office that houses CSICOP. We are getting ready for our first major conference, and someone opens the office door and in comes a bundle of motion, a whirling dervish to meet with Paul Kurtz, but he can't resist stopping every so often to do a card trick here, engage in banter with the staff there—coins coming out of ears—then into Kurtz's office. *What the hell just happened?* I see him later at the conference talking about Project Alpha, where he helped plant young magicians in a parapsychology lab. Oh, so that blur of energy was James Randi! I had read about him!

A couple of years later, walking into a hotel in Boulder prior to a CSICOP conference. I hear "Barry, Barry, come join me." It was Randi calling me over to join him at his table. How the heck did Randi remember me? Randi is asking me to join him?!

Randi and Paul Kurtz at CSICOP organizing conference, SUNY Buffalo, May 1976. (Image via Barry Karr)

Fast forward. I had traveled to China as part of a CSICOP team conducting investigations into qigong masters, amazing "psychic" children, and remote healers. The results of these investigations can be found in the Skeptical Inquirer. But the stories: I remember a lavish banquet one evening with our hosts. Randi was sitting across from me and staring intently. Feeling nervous, I brought a bite of food to my mouth, a morsel of something, and Randi burst out laughing at me. I never knew what it was I ate. It was good, but I never wanted to know.

I won't forget the way members of the CSICOP team played with and enjoyed entertaining the "psychic" children. While a test was being conducted everything was very serious, but the next moment at the conclusion of a test there would be Randi performing magic tricks. I remember how James Alcock, who is quite tall, and Randi, who wasn't, would draw a crowd wherever they went. People were amazed at the juxtaposition.

For years Randi would call me "Barry Automobile" because of the translation of my last name, which kind of stuck with our Chinese hosts.

Watching Randi and Phil Klass trying to create a hoax video of Randi trying to use his psychic powers to transport through the Great Wall. It's so bad.

What you don't know: Randi helped bring and pay for the Chinese student translator for our group to come to the United States to go to college. The person worked for a time here and then went back to China and founded one of the first major technology companies in the country. As his English name, he took the name "James" in honor of Randi.

We all know about the investigation Randi led into the faith healers. When Randi went on *The Tonight Show* and blew the lid off the Peter Popoff ministry, I know that skeptics everywhere felt a tremendous sense of accomplishment.

When Randi's book on these investigations, *The Faith Healers*, came out, I was the person who arranged his lecture/publicity tour. For weeks Randi crisscrossed the country doing five, six, seven TV, radio, print, and other appearances in a city, and then on to the next. I had people picking him up and chauffeuring him about and then getting him to the airport and on to the next. It was an incredible grind. I am sure it was close to 150 appearances.

The best moment for me was when Randi went on the Johnny Carson show (not the famous Popoff appearance but a later one). I was visiting at my parents' house. After the show aired on the east coast, Randi called me. My mother answered the phone, and there she was talking with Randi. We had just watched him on the Carson show, and now he was talking to my mother asking her what she thought of the show, etc. I think it was that moment that my family realized that what I was doing was important work; it had meaning. Before that, the family question to me was, "So you still working for that company that's going to get you sent to Hell?" That all stopped.

I've got so many more, but they will have to wait for an-

other day. Thank you, Randi, for all that you've done and what will continue because of you.

HARRIET HALL

The world seems a bit dimmer today without Randi in it.

James Randi was like Dumbledore, only better. Dumbledore was the kindly wizard who was headmaster of Hogwarts in the Harry Potter books. I compared Randi to Dumbledore in my tribute to Randi in the January/February 2019 Skeptical Inquirer. They were similar in so many ways! Long white beard, thin build, intense gaze, carries a stick (magic wand, skull's head cane), benevolent, wise, deep capacity for love, immense brainpower, a profound understanding of human nature, a lively sense of humor, impressive feats of magic, associated with an animal (the pet phoenix Fawkes, Pigasus the Flying Pig). And, incidentally, gay—a fact not revealed until late in life (in Dumbledore's case, after death). The parallels are endless, but Randi was better than Dumbledore because he was a real person rather than just a fictional one.

Image Copyright Deyvi Orangel Peña Arteaga

One of the great icons of skepticism and a tireless foe of fakers, his accomplishments are too many to list. Randi will never really die. He lives on in the hearts of the countless multitude of people who met him and were influenced by him. He changed many lives, mine among them. I felt privileged at first just to hear him speak, and you can imagine my delight later on when he recognized me, remembered my name, and wanted a hug. I was proud and honored when he chose me to represent one of the four queens in the Amazing Deck of Cards he created to commemorate the film *An Honest Liar* (I was the Queen of Spades). So many fond memories! Always the smartest person in the room, he was one of a kind. I respected him, I admired him, and I loved him. I still do. He will be sorely missed but will never be forgotten.

RICHARD DAWKINS

He was a founding father of the American skeptics movement, along with Martin Gardner, Paul Kurtz, and other luminaries. Younger pioneers of the movement will doubtless be giving us their own firsthand tributes. To my regret, I didn't know him personally so well as they did.

I encountered him each year at TAM events and then at CSICon. On one occasion at TAM, he interviewed me after my lecture, and that was a memorable experience for me. Earlier, in 2003, he was the inaugural recipient of the Richard Dawkins Award, and I felt very honored to present it to him. I think it was before that that I invited him to lecture in Oxford, and he stayed with us as our houseguest. He delighted my young daughter with his twinkling good humor as he performed magic tricks for her over breakfast. And his Oxford lecture was of course spiced with his trademark stunning illusions.

I hugely admired his courageous stand against litigious spoonbending charlatans who grew rich by pretending they were something more than ordinary conjurors—actually rather mediocre conjurors—and who prostituted their so-called "powers" for monetary gain. And also his exposés of bogus spiritualists who faked an ability to communicate with the dead, thereby exploiting the vulnerable bereaved. Well, I said "bogus" spiritualists, but what spiritualist is *not* bogus?

As a fervent admirer, albeit from the sidelines, I mourn him and salute his memory.

BILL NYE

You may not believe me, but for a brief period in the 1980s I worked hard at being a stand-up comic. My success was limited at best … obviously. To that end, I watched Johnny Carson's monologue on the *Tonight Show* almost every night. I was watching when Randi let the world listen in on

the convo (as the kids say) between faith-healing charlatan Peter Popoff and his flock—his marks, his targets. The exchanges were enhanced by some significant contributions transmitted to Popoff by his equally deceitful wife through Popoff's "hearing aid." That a man of faith would need hearing enhancement might have raised suspicion among the people he was willingly and willfully injuring for profit. For Randi, it wasn't just mediocre magic; it was absolutely infuriating. He won a MacArthur Foundation grant for his debunking. I was impressed.

A few years later, the National Science Teachers' Association invited Randi to speak at our annual conference in St. Louis. He stole the show. Come to think of it, he stole all sorts of things—then gave them back. I was entranced. Then I read *Flim-Flam!* and saw the video of the poor water witchers trying to find buried pipes with no, I mean really, *no* success. He even took the time to appear on the *Science Guy* "Pseudoscience" show; it has become one of our most popular episodes. As you would expect, he was a playful presence and a master magician.

Randi was a genius, and he was passionate. If for some reason you have not seen *An Honest Liar*, the documentary about his life, please do so. And if you are not brought to tears by his deep love for his husband, Deyvi, well …

Randi was remarkable, not only as a magician but as an intellect. He gave deep thought to the human experience and especially to that feature of human nature that enables us, even encourages us, to trick ourselves into believing things that just aren't so. I claim he succeeded. After all, it's not his Magic Foundation or Sleight of Hand Foundation. It's the James Randi Educational Foundation. He educated all of us and left the world better than he found it. Let's insist that citizens question questionable claims. Let's do our best to carry his memory, because he taught us all to carry a skeptic's honest view of the world. James Randi was amazing.

James and his husband, Deyvi. Photo by Kristiane Sarma.

AMARDEO SARMA

It was December 1986 when I felt honored to receive a letter from the unforgettable James Randi himself. I was in contact with CSICOP to start a group in Germany. Randi lifted my spirits with his letter dated December 14, 1986:

> I have heard from Mark Plummer, Executive Director of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), that you are interested in forming a group in West Germany similar to CSICOP. I wish to encourage you to do this and hope that you are successful.

We were, and GWUP was founded less than a year later on October 11, 1987. Randi had continued writing letters of encouragement in the months leading to and following the founding of GWUP. He also visited Germany several times during this period, always lighting up our spirits and supporting our work.

One of these first memorable visits was at the European Skeptics Congress in Bad Tölz, Germany. He gave the keynote speech, fascinating us all. Historically noteworthy for skeptics was that alongside him was a young Italian apprentice, Massimo Polidoro. Polidoro became the leading figure in the Italian skeptics group CICAP.

In these first years, Randi became involved in our first big challenge. The German ministry for research had awarded researchers in Munich around $200,000 to find evidence for the effects of Earth rays (E-Rays as Randi called them).

Shortly afterward, with the constant support of Randi, we conducted a similar test in Kassel, Germany, with all the safeguards included. We had devised the conditions carefully, and Randi himself came to Germany to supervise the tests. It was a great learning experience in the double-blind testing of fringe claims. The dowsers failed to accomplish what they believed they could.

Less known is that James Randi also visited Jena in East Germany on October 24, 1989, described as a sign of growing U.S.–East German normality before the fall of the wall on November 10 and the subsequent unification of Germany a year later. His lecture had a large attendance of 500, among which were also known believers in dowsing.

The highlight of the 6th World Skeptics Congress in Berlin in 2012 was Randi. His review of decades of skeptical work followed by a Houdini Seance with Massimo Polidoro and Ray Hyman was fascinating. What an appearance. What a show!

Randi has also been a friend of the family ever since, showing our kids his magic during breakfast whenever he stayed with us. My wife and I are so thankful that we could visit Randi and his husband in 2014 and visit one of the premiers of *An Honest Liar* during our stay with him in Fort Lauderdale.

Randi's contributions to the development of skeptics groups in Europe cannot be overstated. He will be remembered as the ever friendly and inspiring elder from the other side of the Atlantic, as well as the central figure of the skeptical movement.

JOE NICKELL

As he was to so many, James Randi was my mentor and friend—a friendship that lasted for over half a century.

I first met him in 1969 in Toronto when I was coproducing as a freelancer a documentary for CBC Radio. It was titled *Houdini in Canada*, so Randi, the modern embodiment of Houdini, was a must-have for an interview. Magician Norm Houghton knew Randi happened to be in town and called him to enlist his help on my behalf. Randi went on to become the star of our primetime documentary.

I was at the beginning of my own budding career as a magician, and so I was a bit star-struck on meeting Randi. Not only was he a world-class escape artist who freed himself from incredible confinements—a locked safe, a jail cell, a box submerged in water—but he did so with such apparent ease that some dared speak of dematerialization. Everyone was dazed and amazed by "The Amazing Randi." He was indeed amazing!

Randi became a big influence on me, and soon—like him and Houdini before him—I too was challenging charlatans and investigating the world's strange mysteries. Randi kept an eye on me and my work and was always there for advice and encouragement—as he provided to many other skeptics. He once sent a letter commending me on my work. I mentioned this once at a meeting of CSI's Executive Council (which I served on at Randi's insistence), telling the others that this letter of encouragement had "kept me going once for five years." At this, Randi—who had been leaning back and "resting" his eyes—opened one eye and quipped, "Remind me to send him a ten-year letter next time!" It was an amazing moment.

Another memorable act of encouragement was not a letter but instead something quite different, addressed to readers and kept secret from me—at first. It was his peer-review for a publisher of the manuscript for my book *The Mystery Chronicles*. His review was so enthusiastically favorable and colorful that not only did it get the book published, but the publisher asked Randi if it could be used as a foreword! It could. Amazing!

In recent years, Randi was at a conference on stage at a microphone, while an appreciative audience was asking him questions. Someone asked, who did he foresee as his successor? He looked over the faces and stopped at mine. "Well," he said, "Joe Nickell for one." I did not have a microphone but yelled back, "You changed my life!" Randi laughed in acknowledgment. Amazing!

I owe Randi more than I ever told him, but, like other generous people, he expected little in return. To him a protégé's success was his success. Because of him I have made efforts to pay my debt forward. I cry for him now, but I will soon only laugh when I think of him and open my mouth wide in amazement—having learned from him yet another magical secret. Amazing!

Escape Artist

Joe Nickell

You cast
off the last
    shadows,
        shackles
from long life.
You were a gift.
    Crowds
were so drawn to your cause
    you seemed permanently bowed
by their applause.
    I thumb through my mind's
    snapshots to find
you performing again—
    almost as if,
        some way,
while I hold my breath,
you escape death
    for another day.

SUSAN GERBIC

James Randi is … was … the force of nature we needed to kick us in the pants and start taking pseudoscience seriously. Magical thinking is a cancer that invades the body. Without intervention it can mush the brain, leaving people vulnerable to be preyed on. Randi called out the bullshit, stood up for science, and showed all of us how easily we can be fooled. No one is immune. Given the right conditions we all can fall for the con. Randi worked to educate us on how to see the trap and inoculate ourselves for times when we might be weak. Other times Randi worked to shut down the nonsense so that millions who hadn't learned about the trap would never come across it.

Randi was truly amazing, and he joins a growing list of people who have shown us a better way of fighting. Use show-

manship, investigation, and documentation and surround yourself with like-minded people—then report back even when you fail. These are all lessons we need to learn.

I'm still having difficulty processing the death of Randi, who had a powerful influence on how I think about activism. I float between present and past tenses to describe what he means … meant to me. He had great kindness toward those who have fallen for magical thinking and great anger toward grief vampires and quacks who seek to take advantage of others.

One quick story: Randi tested a man who thought he and his son were magnetic (you can find this on YouTube). Magnet-Man went on a TV show with his son who was about eight years old. They proceeded to stick heavy objects on their bare chests. Randi put talcum powder on the father's chest, and afterward nothing would stick. It was a giant embarrassment. What is not well known is that Randi asked that the son not be present when it was shown how Magnet-Man was thwarted by talcum powder. Randi knew Magnet-Man had deluded himself into thinking he had magic powers and was teaching his son to think the same. Not allowing the son to see his father fail was a kindness that sums up the character of James Randi. We should all be so kind.

ALEJANDRO BORGO

I met James Randi in 1996, when he came to Buenos Aires invited by the Magician's Entity of Argentina to give a lecture. Before presenting his talk, he met with some of us—at that time members of the Argentine Center for Research and Refutation of Pseudoscience (CAIRP). We talked about skepticism issues and strategies for getting the skeptical "message" to people.

I asked him if he was in favor of a crude, frontal, and somewhat aggressive skepticism or if on the contrary he preferred to approach the public in a friendly, softer way, showing understanding and kindness. Randi thought both approaches had to be used, depending on the circumstances. It was not the same, he explained, to debate with a charlatan who knows that he is cheating versus addressing people who could often feel intimidated by a rigid or bellicose position. "Friend of the people, enemy of charlatans" was his slogan.

He also told us that Carl Sagan had given him a draft of the book *A Demon-Haunted World* for Randi to read and advise on. Sagan had given it to Randi because he had doubts: "Wasn't I very aggressive and strict?"; "Do I have to soften the book?" Randi replied: no, that was fine. Not a single comma should be changed. Arguably, *A Demon-Haunted World* was the least politically correct book that Carl Sagan wrote.

During that conversation Randi listened and made gestures and jokes. He was constantly moving. He did the same in his lecture. He was a very kind, shrewd person, with an irrepressible sense of humor, although when he debated or faced an enemy, all that kindness disappeared. He maintained the same posture, listened attentively, and sharpened his senses, but he was not the same.

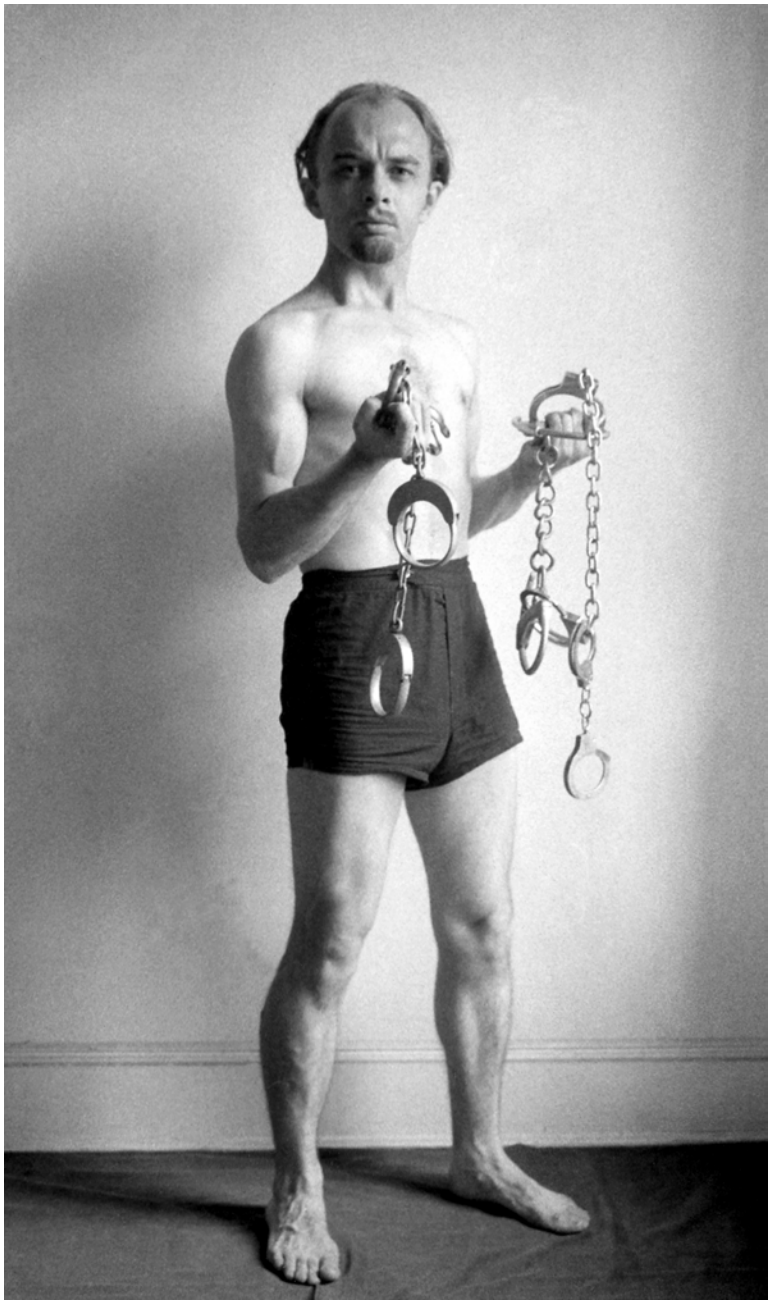


Image Credit: *An Honest Liar*

The second and last time I met Randi was at the 5th World Congress of Skeptics held in beautiful Abano-Terme, Italy, in October 2004. Some of the speakers were Paul Kurtz, Joe Nickell, Ray Hyman, James Alcock, Massimo Polidoro, Kenneth Feder, Barry Beyerstein, and Sergio Della Sala, among others. By then, Randi was already a mythical figure in the realm of skepticism.

Randi's presentation was wonderful and very entertaining. He made a narrative of his television appearances, his detective methods to unravel fraud, his famous "escapes," hanging upside down in the air while he got rid of a straitjacket and other "small" feats. In some cases, he had to resort to his great

talent for improvisation and ingenuity in front of a distrustful public. That is why he was known as James "The Amazing" Randi. He was a connoisseur of the intricacies of deception, and because of that he advised psi researchers to have an illusionist on their team.

You could debate anything with Randi. He had an open mind, although "not so open that your brains fall out," as a phrase attributed to great British philosopher Bertrand Russell notes. To list here the milestones of his career would take a work from a monumental archive. Needless. Everything or almost everything is in his books, on the website of the James Randi Educational Foundation, on other websites, and in countless articles and notes from many, many media.

I remember his sharp gaze, his patience to listen, and a joke he played that revealed his sense of humor in any circumstance: back at the airport, we were with my friend and colleague Luis Alfonso Gámez standing in front of a screen that announced the flights. Suddenly we heard a familiar voice warning us: "Skeptics are not allowed at this airport!" Who could it be but James Randi himself, winking at us, raising his eyebrow, with a knowing smile?

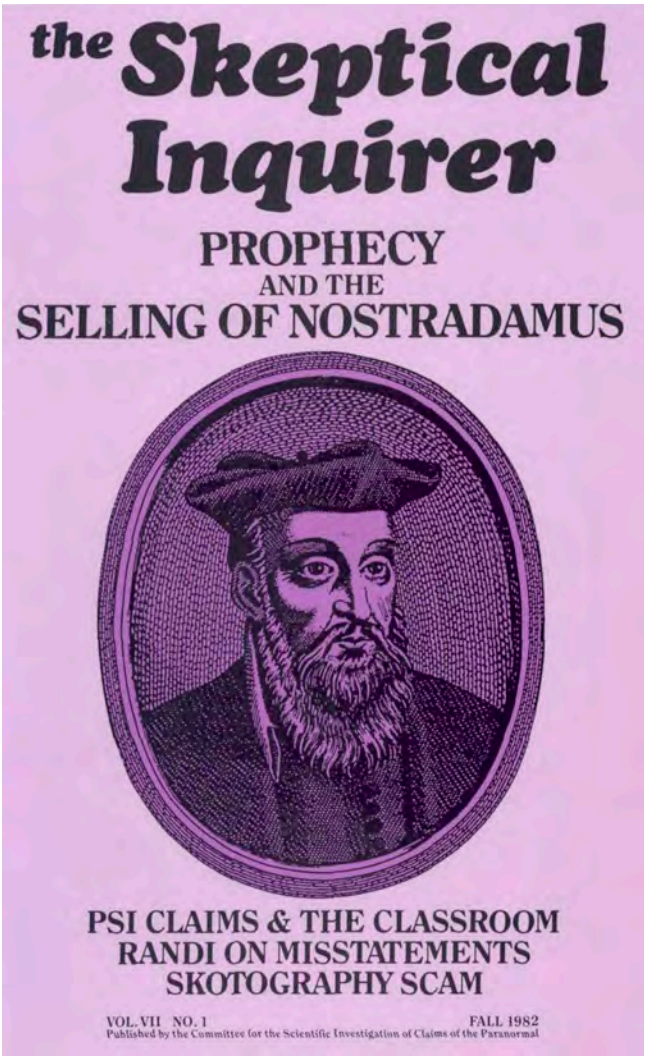
He was a master of masters.

BENJAMIN RADFORD

It's not much of a stretch to say that you probably wouldn't know who I am if not for James "The Amazing" Randi. The first substantive skeptical (that is, not merely hedging but unequivocally evidence-based and critical) analysis of pop culture woo (to use a term he liked) I ever saw was written by Randi. I was in a tiny used bookstore in Logan, Utah, in 1992 on an ill-fated search for beer when I spied the purple cover of Skeptical Inquirer magazine (Fall 1982). The cover read, "Prophecy and the Selling of Nostradamus," and I'd never seen anything like it.

Oh, I'd heard of Nostradamus, of course … over and over in breathless and sensational magazine articles, books, and TV shows gullibly praising the French writer for his seemingly specific, irrefutably accurate, and obviously inexplicable predictions. Everything I'd heard up to that point promoted the prophecies. I picked up the magazine, turned to page 30, and found a lone voice calling bullshit. Randi had brought—*gasp*—scholarship to the topic; there were even references! Peppered with witticisms, his piece provided an overview of Nostradamus and gave rational, logical explanations for why the predictions only *seemed* to be correct, drawing on fields including psychology (a subject I was then completing my undergraduate degree in).

I snatched the magazine off the rack and read it on the plane home. I realized that not only was there a whole other side to the Nostradamus claims but that an educated layperson who had done diligent research could be enough of an authority to write about it. Randi was a magician and skeptic, not a scholar of Middle French. But he knew how to research



Randi's Nostradamus article in SI that inspired Radford.

and to interview experts as needed. I realized that if Randi could do it, then maybe I could do it. ("It" in this case was limited to researching and publishing a skeptical analysis of a popular topic; this was long before I knew what a storied past he had—from magician to Alice Cooper's stage manager to Uri Geller gadfly.) Throughout his career, he boldly called out bullshit and devised clever ways to expose it.

I later joined the Committee for Skeptical Inquiry and Skeptical Inquirer, befriending Randi and other pioneers of the modern skeptical movement. Many of his most prominent investigations (into Geller, Peter Popoff, and Project Alpha, for example) were before my time in the organization, but he was still active, and we overlapped for many years. The more I learned about his investigations and his role in creating CSICOP, the more amazing he was. I dedicated my 2010 book *Scientific Paranormal Investigation* to Randi (and Joe Nickell), "the best of the best."

In later years, I mostly saw Randi at conferences and was honored to share the stage with him a few times (on both land and sea) and visit him at his Florida home with his husband, Deyvi. Many of the conferences are a decade-old blur, but I fondly remember accompanying him to Dillards in his zippy

Image Copyright Deyvi Orangel Peña Arteaga

Randi in Conversation

"At one point Geller bent a spoon and showed it to me. He said, 'Did you see that?' I looked at him, I said, 'Yes, Mr. Geller, I did see that.' He just looked, hesitating. Then he put the spoon down and went on with something else. I think it tipped to him at that moment. That was a revelation to him because I said it that pleasantly: 'I did see that.'"

"I am a debunker, yes, by definition, but I think *scientific investigator* covers it better because I try to be scientific. I don't have the credentials for that at all, but I have met the approval of many leading scientists, including Carl Sagan, and many, many other people around the world in that respect. I accept it. I do try to be as scientific as I possibly can, and I'm not afraid to phone people up and ask them for advice on how I should state something to make sure that I have it as accurately as I can."

—James Randi in an on-stage interview with Kendrick Frazier at CSICon 2016, published as "Still 'Amazing': A Conversation with James Randi, Part 2," Skeptical Inquirer, May/June 2017

MARK EDWARD

Randi is gone. We never thought it would actually happen, such was the almost super-human aspect of his personality and achievements. There is no use bemoaning the tremendous loss those of us who loved him have suffered. Rather I'm on the side of remembering the many times I shared with him that were funny and life affirming.

When I first met Randi back in the late 1970s, I had no idea how he would go on to be such a great friend and mentor. From an early start in understanding his style, it soon became apparent I could talk magic with him like nobody else I ever met. He got it and was never in the camp of standard magicians I grew up with who held their secrets in such high regard.

In the later years when I traveled to international events where he presided, as soon as we sat down, we immediately took up wherever we left off about this gadget or that mentalism technique as the rest of the assembled world seemed to fade away. And we could talk and laugh about anything. It was always a nonstop round of ideas and tales that covered many decades of his personal dealings with the best magical minds sky-blue Mazda Miata to buy a new outfit for an upcoming TV show. Randi delighted a salesman who recognized him with a magic trick. On the way back, we talked about everything from his rivalry with Geller to our shared love of South American travel. Randi never taught me magic tricks (despite playful pleading), but he did teach me the importance of taking time to reach out to others, and that for virtually every "unexplained" topic—from psychics to ghosts to curses—there is another side to the story, often just as interesting as the sensational version. And best of all, it's the truth.

in the world—because he himself was one of those stellar celebrities. He never turned away from me, either in conversations or during the rough times when I treaded the dark path I chose to negotiate to write my book *Psychic Blues*. He knew where my heart was because he had been there himself. He generously wrote an introduction to my book for which I will forever be indebted. He likened it to a modern version of *Nightmare Alley*. His irreverent sense of magical wisdom and playfulness was singular. I remember one lunch with Randi loading a sugar bowl at a high-end restaurant with no-tear sugar packets—and impishly awaiting the victim.

Now I find I have lost one of the few great minds in magic I had left. It wasn't the tricks or methods he imparted (and there were many); it was the sense of Randi's vast experience and compassion for the human condition that caught my heart. He will never be replaced.

RICHARD SAUNDERS

The shortest giant I ever knew. That's what I heard myself saying to someone the day I heard the news of James Randi's death. And a giant he was. A giant in the world of conjuring, a giant in the world of writing, a giant in the world of skeptical investigation, a giant of the lecturing circuit, and a giant of a friend. There are not many on this earth, in any era, who can say they had the chance to meet someone who embodied the best of a particular walk of life or field of knowledge. Not just someone of note, not just someone near the top or someone who shines very bright but only for a short time.

I never met Picasso. I never met Hawking. I never met Darwin or Newton or Sagan. I have yet to meet McCartney. But not only did I meet Randi, I came to call him friend. I gained much from him, and he, just maybe, a little from me. And standing on his small shoulders gave me a giant's view of reality. Once you glimpse that view, there is no going back. With everlasting love and thanks to my old mate.

NEIL deGRASSE TYSON

James Randi enjoyed mythic stature in the skeptical universe. With his white beard, bushy eyebrows, and piercing stare, he belonged somewhere on a mountain, looking down at the rest of us mortals. Yes, us mortals. Mortals are human. We are unwitting victims of our own sensory frailties. We are distracted by our biases. We long for what we wish to be true. But when you coupled James's formidable scientific literacy with this deep understanding of the human mind, and how we can be fooled by others and by ourselves, you get someone who transcends the biological vessel that contains him.

In college, the first book I ever read on skepticism was *Flim-Flam!*, of course written by James Randi. Later, as a professional, I was delighted when we finally met and looked forward to spending any time I could with him. Why? Because he was always the most perceptive person in the room. I felt childlike in his presence, learning at every turn from the master—from offering simple and entertaining sleight-of-hand magic tricks, to revealing the tactics of mentalists, mediums, and other charlatans who claim special powers over mind and matter. James Randi was on the front lines of it all, leading the charge against fuzzy thinking and toward a more rational society. Sure, I'm a scientist, so our Venn diagrams of inquiry overlapped in many places. But they did not overlap in subterfuge. In this realm he knew more about how I think, feel, and react than I do. A stark reminder that even with a PhD, I'm still human. Which is the only prerequisite you need to being fooled. And James Randi knew that better than any of us. ■

James and his husband, Deyvi, on the set of *An Honest Liar*. Image Credit: Tyler Measom

Clear Thinking about Conspiracy Theories in Troubled Times

Are we really awash in an unprecedented pandemic of conspiracy theories? It may seem that way. But a lot of our thinking about conspiracy theories is wrong.

JOSEPH USCINSKI

This article is based on a Skeptical Inquirer Presents live online presentation on July 30, 2020.

I'm going to discuss the latest polls, particularly those about COVID-19 conspiracy theories. I'm going to consider why these theories are popular or not, and then I'm going to go meta. I don't think I need to spend that much space addressing this audience about why conspiracy theories might be dangerous or why we should rely on authoritative information rather than on poorly sourced information.

I'll describe what's wrong with the popular discussions of conspiracy theories. What are the things that the journalists and perhaps some scholars are getting wrong? And I'm going to answer what I think is one of the more important questions nowadays: What are the dangers of believing the wrong things about beliefs in the wrong things?

To start, a conspiracy theory is an accusatory perception in which a small group of powerful people is acting in secret for their own benefit against the common good—and in a way that undermines our bedrock ground rules against the widespread use of force and fraud. In addition, this theory hasn't been found to be true by the appropriate experts, using data and evidence that is available for anyone to refute.

There are numerous conspiracy theories about COVID-19 out there. There are, in fact, too many to debunk them all. We've seen a deluge, whether they're about Bill Gates or George Soros being behind COVID-19 or that 5G technology is spreading the virus further. Some people have even responded by burning down cell towers. Some think that when a vaccine is released, we're going to be microchipped and tracked by the government. Some think that Big Pharma is behind the COVID-19 "scam," and they're going to make money by selling us a phony vaccine for a phony disease. And others are saying that doctors and hospitals are faking patients to make money.

So there are a lot of weird theories out there. Luckily, not one of these is believed that widely.

Most COVID-19 conspiracy theories fall into two broad categories, which I've been polling on since March. The first is that the disease has been exaggerated for political gain, usually to hurt President Donald Trump in an election year. The other is that it is some sort of bioweapon created or spread on purpose. When we poll on the idea that COVID-19 is being exaggerated to hurt Trump, we get about 29 percent of Americans agreeing. We get a similar number, 31 percent, agreeing with the idea that it's some form of bioweapon.

Some of the most-fringe ideas don't convince as many people, but these two ideas do each get about a third of Americans buying in. How come? Why do people believe conspiracy theories? A more general question is why do people believe anything really? And the answer to that question is, well, there are a lot of reasons. What's important to know is that there's not going to be any single reason people might believe

in conspiracy theories, because there are so many conspiracy theories out there, all with their own idiosyncratic reasons people would come to believe them.

So *conspiracy theory* is a big bucket, and there could be a lot of reasons somebody could believe in any specific theory. I've also been polling on other ideas that have to do with COVID-19. And conspiracy theories aren't the only ones that are dangerous. For example, in my most recent poll of Americans, we got almost 15 percent believing that people who are right with God won't be injured by the coronavirus; almost 30 percent believed that prayer will protect them from COVID-19. Those ideas can be just as dangerous as believing that the disease is exaggerated.

So why do people believe conspiracy theories? In my research, the big explanatory factors are the latent dispositions that people have. The two I focus on are conspiracy thinking and denialism. Conspiracy thinking exists on a continuum; we all have it to one degree or another. Some people have it very strongly; others have it far less. But most people are somewhere in the middle. People who have very high levels of conspiracy thinking tend to think that everything is the product of a shadowy conspiracy. The people on the low end tend to be resistant to conspiracy theories.

Denialism works in a similar way. Some people have an antagonistic relationship with authoritative sources of information. When they hear something on the news, from scientists, or from government agencies, they say, "Well, I'm just not going to believe it." All of us have this to some degree in that we resist information we don't want to hear. But the people with elevated levels *just don't believe things*, whether it's from the news, government scientists, or other authoritative sources.

Another factor that drives conspiracy beliefs is our group attachments. The group attachment I am most concerned with is our partisan political attachments. Whether a Republican, Democrat, or something else, we engage in motivated reasoning. We believe in information from groups that we trust. When our group wins, we say, "That's how it should be, because our group is righteous and just." But when our group loses, we sometimes say we were cheated; *the other side* engaged in illicit practices, and that's why we lost.

Furthermore, we take our cues from the leaders we trust. If you follow the president and he engages in conspiracy theories, then you'll be more likely to believe those conspiracies. The next factor is information. If we're told information from sources that we trust that there is a conspiracy afoot, then we'll be likely to believe it. The final factor is that we can imagine our own conspiracy theories and make them up ourselves. We don't need someone else to share them with us. If we have high levels of conspiracy thinking, then it's not hard to imagine that everything we encounter during the day is part of some conspiracy.

So those are the broad reasons. We can put it into a very simple conceptual model: As information comes into our brains during the day, that information will be laid over the set of dispositions that we carry with us. And that information will be interpreted by those dispositions, which will then inform our particular beliefs about the world.

A person with elevated levels of conspiracy thinking will interpret the same information very differently from a person who has lower levels. The same information can lead two people to very different conclusions about the world. It is therefore our dispositions that divide us. To varying degrees, all of us have these dispositions operating within us. I imagine that most in this audience have low levels of conspiracy thinking. But for the mass public, this is a powerful force.

In sum, people believe these things for a lot of reasons. We have our motivated reasoning at play. We have conspiracy thinking at play. Those drive us to either engage with conspiracy theories or not and then to engage with particular conspiracy theories.

Why should we care if people believe in these theories?

If our beliefs are disconnected from our shared reality, then those beliefs are potentially harmful. If you believe that COVID-19 is a hoax, then you're not going to engage in best practices, such as frequent hand washing, mask wearing, or social distancing; you run the risk of further spreading the disease. But downstream from that, when people start to believe in a lot of conspiracy theories, it can make them distrust our institutions and our scientists, and that can lead them to believe in yet more conspiracy theories and detach themselves further from our shared reality. There are real reasons we need to fight against these beliefs.

But we need to get the causal locus right. Right now, a lot of the discussions about conspiracy theories get it wrong. With even the best intentions, journalists are saying the wrong things. The best-intentioned legislators believe the wrong things, and they may act the wrong way. And if they don't act the right way, then they could very well injure our rights. They could wind up censoring social media. And really, they may not have any impact on conspiracy theories at all.

What if it were the case that the people in Congress who want to legislate social media to tamp down on conspiracy theories are the people who are actually spreading the most conspiracy theories? For example, if you go back a few months, there was a hearing with tech moguls in front of Congress, with legislators complaining that there are so many conspiracy theories online. They asked: What happens if politicians want

to share misinformation on Facebook? The question I had was, if it is indeed political elites who are sharing these ideas, is it really the fault of Facebook? Why can't Congress and the parties police their own if they are so concerned? Politicians would spread misinformation anyway without social media, and it would be spreading because of the people in Congress and the White House. We need to do things to dissuade politicians from sharing conspiracy theories, but social media may not be the problem.

We all have a role to play, but we should understand that the methods in which misinformation gets shared are still the old-style methods. And motivated reasoning and dispositions lead people to their beliefs. The internet may not be as much of a spreader as we think. To explain why, let's talk about some of those misconceptions a lot of people have. Much of the reason for regulating social media would be because people are supposedly becoming more conspiratorial now than they were in the past and that that effect is due to social media.

Here's the empirical question: Are Americans believing more conspiracy theories now than in the past? The headlines would make you think that they are. We have newspaper headlines saying we're now in the golden age of conspiracy theories. I would forgive you if you thought that were true. The problem is, if you go look through the headlines for the past sixty years, you will find journalists saying this almost every year, and it can't always be true, or else we would have fallen off the conspiracy cliff by now. But we haven't.

What does the data say? First, beliefs in many conspiracy theories have not increased. Belief in Birtherism, for example, has been flat. Belief in JFK-assassination conspiracy theories have almost been cut in half from where they were in the 1970s. In fact, those beliefs were almost 80 percent for decades. And it's only been since the introduction of the internet that they've come down. In my latest poll in March, they were around 44 percent. That's perhaps the first time they haven't been a majority belief in decades.

When we poll on conspiracy thinking over time, we find that it hasn't gone up. I've been polling this since 2012, and we're not finding that Americans are becoming more conspiratorial than in the past. Nor are we finding that they're believing in conspiracy theories more than they have in the past; the data just doesn't show that, at least thus far. If you have the impression that social media are turning everyone into raving conspiracy theorists, rest assured, we're not there yet.

I think the best example I could give is the QAnon conspiracy theory, a conspiracy theory that is rather fringe. And it's extreme, too, in the sense that the beliefs are extreme. It proclaims that President Trump is fighting the deep state, which is composed of satanic pedophiles and sex traffickers. A lot of the reporting lately claims that more people are believing this conspiracy theory now. Yes, it's true that some people who believe it are running for Congress and maybe one or two of them might win. But it's not getting bigger.

If you look at the headlines, QAnon is scary. It's big and getting bigger, and these beliefs are thriving on Facebook. Well, scary, yes, but big, relatively speaking? No. What do the data say? After a month of prolonged media coverage in 2018, we polled on it in Florida. We asked people what they thought about QAnon on a scale of zero to 100. And on average, people rated it poorly, at about a 24. To put that in comparison, we also asked about Fidel Castro, and if you know anything about Florida, you know Floridians don't like Castro. QAnon came out only a few points better than Castro—not well liked at all.

I've repeated these polls in the past few months, both in Florida and nationwide. QAnon has not increased in popularity. Other polls that ask about it find that most Americans still don't know what it is. And there are only about 6 percent in some polls who say that they support it or agree with it. It's not that big; its support is deeper than it is wide.

What is the role of the internet? We hear a lot that the internet spreads conspiracy theories. First, we have to be careful with the word *spreads*. When we say it is spreading, does that mean that it's changing minds? Or do we mean that it's just able to be accessed in other parts of the world? Because if we mean the latter, then, yes, obviously we can access things on the internet that we couldn't before. But is it changing minds? That's a very different matter.

Beliefs in conspiracy theories haven't gone up in recent decades. The forces that drive conspiracy theorizing exist regardless of the internet. And it may very well be the case that in previous decades or centuries, conspiracy theories either spread faster or had worse consequences. If you go back in this country 400 years, we were drowning and crushing "witches" for conspiring with Satan. There was an Illuminati panic 200 years ago. Shortly after that, there was a Freemason freak-out in the 1830s and 1840s. There were two Red Scares in the past century. It's not clear that people were immune to conspiracy theorizing in the good old days. Obviously, they exist today, but it's not clear that they exist more or have more of an impact now. And, even if they did, it's not clear that it would be due to the internet.

When we go on to the internet, we're not just lemmings who are getting tossed one direction or the other by different sets of information that changes our mind back and forth.

Another thing we must think about is that we have libraries that we carry with us everywhere in our pockets. Now accessible through our phone, we have the world's knowledge available to us at the touch of a button. But we seem to think that on the internet, only the conspiracy theories have an influence on us and that somehow when we go to the internet, it's only a swamp of conspiracy theories. That's just not true.

Furthermore, there's a hundred years of media-effects research that shows that news, campaigns, and political advertisements just don't have that much of an effect on people as we commonly think that they do. In fact, the more recent

studies show that the net impact of campaigns is almost zero. I imagine many people, including this audience, are not going to be affected by campaign communications this year. You knew who you're going to vote for a long time ago. And that's the case in many elections. Many of our political choices are made long before we even know who the candidates are, because our dispositions, which are longstanding, drive this stuff. When we go on to the internet, we're not just lemmings who are getting tossed one direction or the other by different sets of information that changes our mind back and forth. We're picking and choosing. And we tend to seek out things that we already agree with because it makes us feel good; we don't change our minds very often. At the end of the day, it doesn't really matter what's on the internet. We still have to choose to access it and then we still have to accept it. It still has to comport with the things that we already believe. So, yes, it's true that there are problems with the information on the internet, and we need to clean it up. But it may not be quite as impactful as people say.

A lot of people thought that the 2016 election was decided by Russian bots or something like that. The studies coming out show that the impact just wasn't as big as some think. The fake news didn't have the impact that people originally thought it did.

Another claim that's popular is that Republicans and conservatives are more likely to believe in conspiracy theories. There are, of course, good reasons to believe this. You had a Republican Senator walk onto the Senate floor with a snowball and say because he was able to make a snowball climate change didn't exist. And you've got a fellow in the White House who makes all sorts of crazy conspiracy claims. I think the kookiest is that Ted Cruz's dad was behind the assassination of JFK. But here's the thing. Those are two elites, and they don't represent a lot of Republicans in the mass public.

What do the data say? First, many conspiracy theories are believed about equally by people on the left and the right. In my recent polls, I asked if Jeffrey Epstein was assassinated to cover up what he knows. I found near equal numbers of Republicans and Democrats answering affirmatively. Conspiracy theories about the JFK assassination are believed equally by people on the left and the right. Fringier conspiracy theories, whether it's the Freemasons or AIDS being created in a laboratory, are also believed equally by people on the left and the right. There are also conspiracy theories that are believed more by people on the left—whether it's ideas that Trump conspired with Russia or that the 1 percent and corporations control everything for some nefarious purpose. Those who believe those are more on the left than the right.

There are good reasons for this. The forces that drive people to believe in conspiracy theories, whether it's motivated reasoning or other mechanisms, operate on both the left and right. When we measure conspiracy thinking in the mass public, we find that it's near equal on the left and right.

Another claim we hear in the media is that conspiracy theories are for political extremists. Well, the fact is it depends on what we mean by *political* and what we mean by

extremist. Some conspiracy theories are going to be believed by the "political extremist," strong partisans and strong conservatives, as long as that conspiracy is somehow attached to conservatism or it's being pushed by Republican and conservative elites, for example. We find the people who tend to be strong Republicans are very likely to believe in climate change conspiracy theories but only because they listen to what Republican elites tell them and because Republican elites keep saying that climate change is a hoax. But this is less about extremism and more about listening to party leaders. After every election, the losing side always thinks that the other side cheated. That has to do with motivated reasoning: no one likes to look in the mirror and say, "Well, gee, our ideas aren't that good or our candidate wasn't that good." Instead, it must be that the other side cheated. I also find this with COVID-19 being exaggerated, because the president and conservative media elites have said that COVID-19 is a deep state hoax or a Democrat hoax, or, as Rush Limbaugh said, Dr. Fauci isn't even a real doctor. Some personalities from Fox News were tweeting about how people should film the hospitals because there aren't real patients there. Well, that's going to drive conservatives and Republicans who are paying attention to believe in those theories.

But absent these theories having partisan or ideological content, cues, or circumstances, you're not going to find political extremists believing in them. In fact, you'll find people from both parties and independents buying in. There isn't really a strong ideological or partisan valence to Rothschild conspiracy theories or Freemason conspiracy theories or ideas about vaccines, GMOs, or the Holocaust being exaggerated

because those don't really have much to do with mainstream politics—or Republicans or Democrats.

When we poll on QAnon, we find that very few people like it. But we also find that equal numbers of Republicans and Democrats claim to support it. And even though it's always called a far-right-wing conspiracy theory, there's nothing really *right wing* about it. There's nothing conservative about it. The people who support it come from all across the political spectrum. What binds those people together is a disdain for the political establishment and elevated levels of conspiracy thinking.

It's not like somebody got into researching George W. Bush and that led them down the path to reading Ronald Reagan's speech, and then they read Milton Friedman, and then all of a sudden it's *Satanic baby eaters*. It just doesn't work like that. If you are a strong Republican or you're a strong Democrat, you're ingrained in the political system. You're not going to believe a lot of these wacky conspiracy theories because you feel comfortable in your part of the system. People who feel disconnected from the political establishment are going to buy into these wacky conspiracy theories.

People who feel disconnected from the political establishment are going to buy into these wacky conspiracy theories.

We tend to think that conspiracy theorizing is an us-versus-them dynamic, that we're the rational ones and everyone else is a conspiracy kook out there. Well it's not an us-versus-them. There are an infinite number of conspiracy theories out there. On any given poll, I can't ask about all of them because there are just too many. But what we find is this: the more conspiracy theories we ask about on any given survey, the fewer people we find believing in none of them. In March, I asked about twenty-three conspiracy theories; I had 91 percent believing at least one. Imagine if I was to ask about fifty or 100 conspiracy theories. I would probably have everyone buying into at least one if not a few.

Again, this is just part of the human condition, and we're all going to fall victim from time to time to a conspiracy theory. There's nothing really wrong or pathological about it. But we do want to make sure that our beliefs are tethered to evidence.

The second-to-final misconception I want to address is: Are these beliefs just an attempt by people to find a big cause for a big event? The answer is not really; this is just an optical illusion. There are conspiracy theories about big events, such as 9/11, the Kennedy assassination, and COVID-19. But all events attract conspiracy theories in varying degrees. There are conspiracy theories about everything, big and small.

What we need to think about is the fact that "big event" is a subjective idea to everybody, just as "big cause" is. Even if we all were looking to attach big causes to big events, it doesn't mean we'd get to any particular conspiracy theory about any particular event. For example, Kennedy-assassination conspiracy theories had 80 percent of people believing them for decades. But far more people believe in Kennedy conspiracy theories than in the 9/11 conspiracy theories. Was Kennedy really bigger than 9/11? Three times bigger? Or the moon landing conspiracy theories? When we poll on them, we get about 5 percent belief. And deep state conspiracy theories, when I polled on that in March, we got 50 percent believing in a deep state. What event is that about that people are trying to explain? Or when people say aliens landed in Roswell and it's being covered up by the government? Was that really a big event that somebody found tinfoil and sticks in the desert? And now 30 percent of Americans believe it. That didn't seem like that big of an event. And what are the events that are driving GMO conspiracy theories or vaccine conspiracy theories? I go back to the idea that it's really our dispositions that drive us to these beliefs and not some sort of search for a particular type of cause or explanation.

COVID-19 conspiracy theories are new. It does seem that these ideas are dangerous and scary because so many of them are wacky. But here's the thing: I've heard so many conspiracy theories that I'm just bored by all of them. Just as people say that COVID-19 is a bioweapon, people were saying Zika virus was a bioweapon, the swine flu was a bioweapon, and AIDS was a bioweapon. Every new disease is a bioweapon. It's the same theory using different nouns. Now people are saying that Bill Gates is behind it. But before him it was George Soros and the Koch brothers. Before them, it was the Rothschilds, the Freemasons, or the Kennedys. It's always some famous, rich person who's behind everything. There's really nothing new there. There is much more continuity than change in the conspiracy theorizing that Americans do.

Indeed, conspiracy theories can be very troublesome. We should work to keep our beliefs tethered to the truth and the best evidence as much as we can, because bad actions can spring from bad beliefs. This is especially true during a pandemic. We need to make sure that we're following the World Health Organization and the CDC and not Todd from Twitter. With that said, there are reasons to be somewhat hopeful and have some faith in humanity. There is more continuity than change. Our believing in conspiracy theories is nothing new, and it's not necessarily worse. We shouldn't be blaming old human problems on new technologies. We should be blaming ourselves! If anything, we should try to steer believers toward better beliefs with sympathy and empathy. But the mechanisms that lead to conspiracy theories are longstanding—and they're just part of being human. ■

Joseph Uscinski is a political scientist at the University of Miami. He is author of *Conspiracy Theories: A Primer*, coauthor of *American Conspiracy Theories*, and editor of *Conspiracy Theories and the People Who Believe Them*. He was just elected a fellow of the Committee for Skeptical Inquiry.

Cognitive Dissonance and the Pandemic: A Conversation with Carol Tavris

Social psychologist Carol Tavris talks about how and why we deceive ourselves to fit our beliefs and to keep peace with ourselves—and what that means during a pandemic and for our democracy in these divided times.

LEIGHANN LORD

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Carol Tavris's book with Elliot Aronson, Mistakes Were Made (But Not by Me), *has just been published in a third edition with a lengthy added chapter, "Dissonance, Democracy, and the Demagogue." This article is based on her Skeptical Inquirer Presents live online conversation on August 27, 2020, with host Leighann Lord, with some updates and revisions for this print version.*

Leighann Lord: Carol Tavris, you're a social psychologist. What is that, and what do you do?

Carol Tavris: So many people think that "social psychology" is just another kind of therapy—maybe one that requires you to go to a lot of parties—but it's an academic branch of psychological science. As Elliot [Aronson] puts it, *clinical* psychology is the study of how to fix people's personal problems; it's about repair. *Social* psychology is about change—changing our environments, changing our lives, changing our behavior, and understanding how other people influence us all the time. Social psychology is an empirically based field that studies the influence of other people on us, whether we're sitting alone in our room or out on a protest march. We get to study everything from love to war, from prejudice and hatred to sex and joy. Pretty broad charter! When I was starting out, I became passionate about the importance of communicating good social-psychological research to a public that was—and still is—used to getting its stories about psychology from therapists. Therapists have the public ear, if you will, as advice columnists, in their roles on TV and in film, and in the courts where they testify as experts. That's why you didn't know what a social psychologist is!

We have tossed around the term *cognitive dissonance*, and it's in the title of this conversation. Can you please define it for us?

This term has made its way into popular culture. It's everywhere: in the media, in cartoons, in political commentary, and it even made *Jeopardy!* People sometimes get it right! Cognitive dissonance is the experience of having two beliefs contradict each other or holding a belief that is contradicted by your behavior. The classic example is the smoker who knows that smoking is harmful but who wants to keep smoking. Dissonance is a very uncomfortable feeling, and as Leon Festinger—who first developed the theory of cognitive dissonance in the 1950s—said, it is as motivating and uncomfortable as hunger or thirst. We don't live easily in a state of cognitive dissonance; we must reduce it to maintain comfortable consonance. The smoker has to quit smoking—or justify smoking. Likewise, a person who is confronted with indisputable evidence that their lifelong belief in X, Y, or Z is wrong is going to face dissonance over this new information. What to do? Change that lifelong belief or tell the bearer of that evidence where they can stuff it? How many people will say, "Oh, thank you so much for this terrific study showing that my belief in the powers of kumquat juice is wrong"? We

are faced personally, professionally, and politically all the time with ideas that cause some dissonance with what we believe and what we do, and how we resolve that dissonance has huge implications in our lives.

Elliot advanced cognitive dissonance theory by emphasizing its power of self-justification. If you have a favorite celebrity who behaves like a dork, the resulting dissonance will be uncomfortable for you but usually you can live with it. If the celebrity is someone for whom you have immense admiration but who then turns out to be a child abuser—say, Michael Jackson—your dissonance will be greater. Some of his fans reduced dissonance by denying the allegations against him, and others did so by swearing never to listen to him ever again. But dissonance is most painful when evidence collides with a fundamental concept we hold about ourselves. For example, when we believe ourselves to be skeptical, smart, and ethical and then we're shown that we gullibly bought into some internet scam, did something dumb, or behaved unethically—that creates a dissonance that we find hardest to accept.

One of the great themes of our book is that it helps us understand that the problems we face are not just caused by bad people who do bad things and justify the bad things they do. (I'm sure we could all think of the few people who fit that description.) Our problems stem from good people who justify the bad things they do to preserve their belief that they're good people.

Let me make it clear that self-justification is different from normal lying to others to get off the hook, to get your way, to get the other person to like you, to avoid a divorce, to get a job, to get a promotion, or to make money. People lie; that's not what's interesting. Dissonance is the mechanism by which *we lie to ourselves* to preserve our beliefs that we are good, kind, competent, moral, intelligent people when faced with evidence that we weren't so kind or smart. Most people, to protect their positive self-concepts, won't reduce dissonance by admitting they were wrong, harmed another person, or held an opinion that should have been relegated to the trash bin in 1987. They will keep doing what they were doing—and justifying it all the more fervently as being right, moral, and appropriate.

What is the confirmation bias?

The human mind comes equipped with a whole little armamentarium of cognitive biases. These help us get along in life. They help us manage our beliefs. They keep our beliefs consistent. They keep us operating in the world. My very favorite is the bias that we are not biased: "I see things clearly as they really are. Therefore, if I just sit down with you and explain clearly and calmly why you are wrong, if you don't agree with me, it is because you are biased and not seeing things clearly."

But of course, the other crucial bias in how the mind operates is the confirmation bias—the disposition to accept and remember evidence that confirms what we already believe and ignore, minimize, or trivialize any information that is dissonant with what we believe—that disconfirms what we believe. Seeking confirming evidence and rejecting non-confirming evidence is really the fundamental way that we reduce dissonance. This is one reason science is so annoying to so many people, because science makes us put our beliefs to the test. It makes us face the dissonant possibility that we are wrong in our hypotheses.

What is the pyramid of choice?

This is a metaphor that we developed and that has, I think, extraordinary applicability. Imagine a pyramid—a simple triangle. Let's say you have two students at the top of this pyramid with the same middling attitude toward cheating. They know that cheating is not a good thing; they really shouldn't cheat, but hey, it's not the worst sin in the world. Now, these two students are taking a final exam on which their grade in the course rests, and they completely draw a blank. No idea what the answers are. Now what are they going to do? They're going to flunk out of this class! They will never get a job! No one will like them, including their cat! Their lives are ruined! Suddenly the student next to them makes her paper visible, and the students must make an immediate decision: cheat (look at those answers) or don't cheat. Now, this is the key: The minute you step off the pyramid in making one decision or another, you will be in a state of cognitive dissonance and need to put your behavior in consonance with your attitude.

So the student who cheated will now think that cheating is really not a bad thing at all: "Oh, for goodness' sake, everybody in this class is cheating. It's no big deal. It's a victimless crime. Who cares? I'll never cheat again anyway. It's just this one time, just for this test." Whereas the student who resisted cheating, to maintain integrity, will now come to believe that cheating is not a victimless crime: "We all suffer from cheaters. It's the wrong thing to do. And I would rather be morally correct and not cheat than get a grade that way." Over time, as the two of them continue justifying the choice they made as they go down that pyramid, they will end up at the base, very far apart from one another in their views about cheating.

Now, some people say, "Oh, well, aren't you just describing the slippery slope?" Yes, in the sense that expression means you start something and then before you know it, you've gone farther than you thought. But a slippery slope is not the right metaphor for dissonance, because the slippery slope is, well, *slippery*. You're sitting there in the mud and you happen, passively, to slide farther along the path—you can't help it. In contrast, cognitive dissonance is the *active* cognitive mechanism that we put into justifying any decision we just made. Imagine that here you are at the bottom of this pyramid; you have now spent days and weeks justifying your decision to cheat "just that once." How likely is it that you will go back up the pyramid and rethink that initial decision you made? Not very. You are investing more and more mental time and effort in making sure you believe you've done the right thing. And with each justification you put in, you are increasing the likelihood that you will cheat *in the future*.

When we look at the behavior of people who seem to

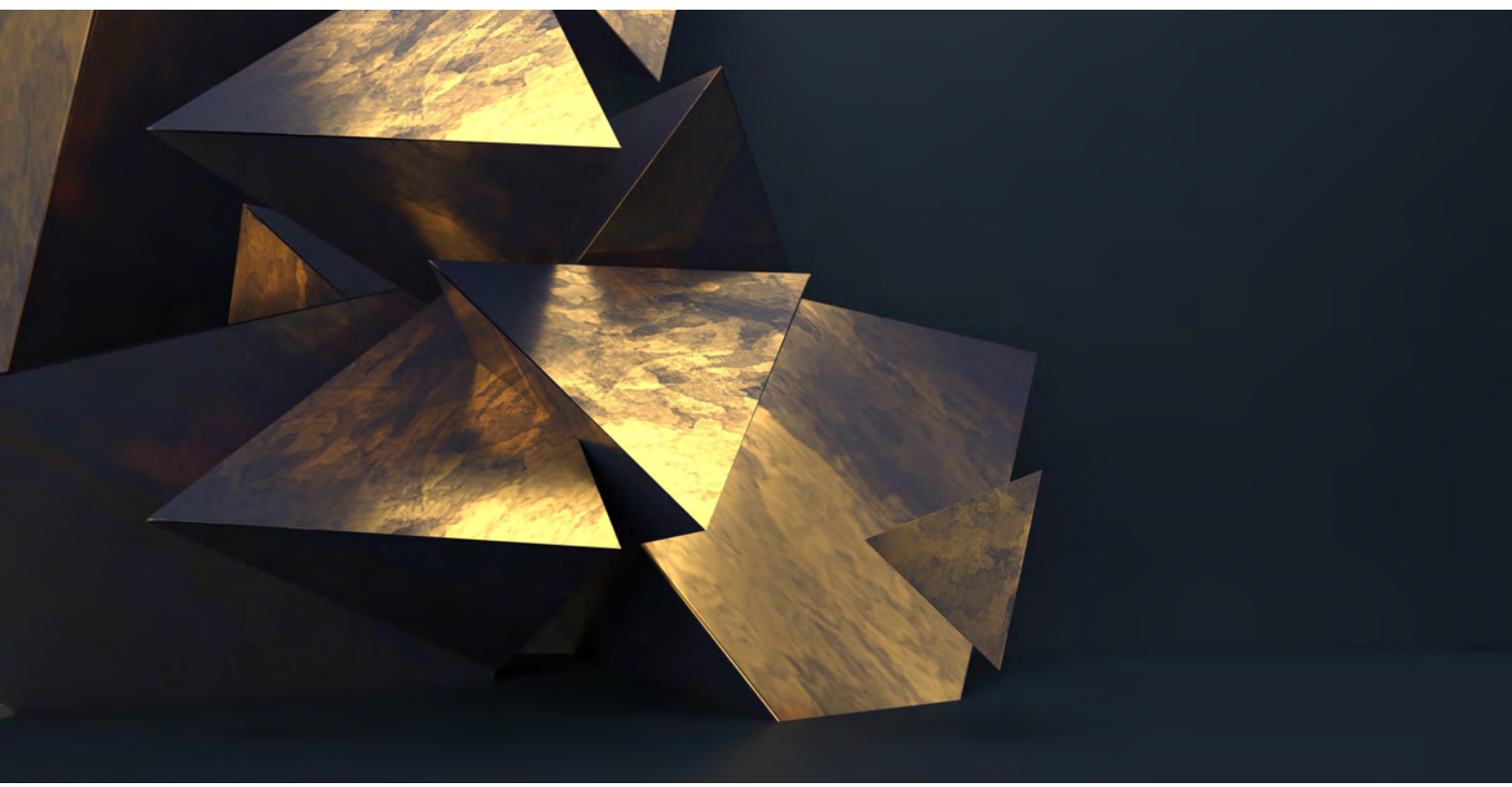
be doing really crazy things or holding lunatic beliefs—the people who joined the Heaven's Gate cult, for example, who ended up committing suicide believing they were shedding their earthly bodies and would be rescued by a spaceship following in the trail of Halley's comet—we think: Huh? How can they believe that? How could they have *done* that? What we're not seeing is how they started off, the process of step-by-self-justifying-step by which they fell from a neutral position at the top of the pyramid to sincere and deep commitment at the bottom.

Well, I think that puts us in the perfect place then, because I think many of us Americans, we're at the bottom of this pyramid. And by this pyramid, I mean the pandemic. Those of us on one side of it cannot understand the people on the other side of it. We're not even asking how they got there; we're just assuming that they're stupid. So I want to go out on a limb here and say a lot of that dissonance was generated by the actions of a certain person at the top.

Well, you have two things in your question. One is the polarizing issue about wearing masks and how mask-wearers and anti-maskers see each other. The other is how that polarization came to be, and yes, it started at the top. That's normal; most people let their political, religious, or identity commitments do their thinking for them. "I am an X; X's believe this way; therefore, if an X thinks this is a good idea or plan, I'll go along." This shorthand way of coming to a belief is mostly efficient and effective.

But once we see ourselves as being part of a group or ideology, dissonance keeps our commitment in line. If you're a Democrat and a Republican does something corrupt, offensive, and immoral, you feel no dissonance because *those* people are always doing things that are corrupt and immoral. If someone in your own party does exactly the same thing, you will be inclined to minimize, forget, or trivialize their behavior. So what we saw at the beginning of this tragic pandemic is the utter failure of leadership by Donald Trump and his administration, the failure to set a coherent and cohesive policy supported by top scientists who are experts in pandemics. Instead, Trump repudiated most of the scientists or contradicted them if they said anything he didn't want to hear. And what he didn't want to hear—for himself especially—was "Wear a mask. Maintain social distancing."

To be sure, Dr. Anthony Fauci made a big mistake by telling the public, at the outset, that he didn't recommend wearing masks and didn't think they would help much. He may have said this because he thought he was making sure the masks would be available for health care workers instead of being hoarded by citizens. But by the time he changed his mind—by the time the majority scientific advice was that masks *are* an important element in slowing the spread—Trump's supporters *had already slid down the pyramid* in believing Trump's initial claims. They believed the whole pandemic was just a hoax and a fraud, not really something to be seriously considered. They were taking their direction and justifications from Trump. "Masks interrupt my freedom; they don't work anyway, and I don't need them." In this way, masks quickly became a symbol of whether you were a Trump loyalist or one of those idiot, pro-science, Democratic nerds. This process underscores the importance of a coherent governmental policy, which so many other countries have managed to institute,



Does Trump Feel Dissonance? Why Do We Feel It? What about Us?

The viewing audience sent in questions during Carol Tavris's conversation with Leighann Lord. Here are a few along with her answers:

What is the difference between cognitive dissonance and compartmentalization?

Compartmentalization refers to our ability to say, "I'm this kind of person at work, this kind of person at home; I'm competitive here but shy there." It's the ability to focus on one thing and put other concerns out of our minds as we do. As a social psychologist, I would say that's a normal process; that's how we all live. Our behavior changes in different situations. But the ability to compartmentalize can help us reduce dissonance on some occasions; for example, justifying bad behavior by saying, "Yeah, I was pretty mean to my coworker, but that's part of my job; I'm really much nicer everywhere else."

Does Donald Trump ever feel cognitive dissonance?

I'd say no, he doesn't, because, after all, in his mind he is the only person on the planet who never makes a mistake. More to the point, to feel cognitive dissonance, you have to have the capacity for empathy, guilt, remorse, sorrow, and understanding the human emotions that connect us to one another. If you don't have that capacity, then you can't feel dissonance when you learn that you have caused hurt or harm or made an error. Trump, who has, as far as we can tell, no such capacity, is the classic con artist. Con artists don't feel dissonance over their cruel or manipulative behavior because they think anyone who falls for their deceit and tricks is a chump. It's the chumps' fault if they are so stupid that they give you their money for Trump steaks or Trump University or Trump any-other-con. Does Trump care that he stiffed his contractors who worked for him, that he denied housing to the African Americans who applied for rentals, or that more than 270,000 Americans have died on his watch of COVID-19 [as of December 2020]? No, he has no feeling for any of the people he harmed by his actions, and therefore no dissonance to reduce.

How does one go about recognizing their own cognitive dissonance?

Well, given that it's mostly unconscious, it's not an easy thing to do. Sometimes it is a feeling of queasiness, embarrassment, or shame that follows the realization that you might have goofed up, that you were seriously wrong about something you did or a belief you held. So the first thing is to pay attention to those feelings of discomfort and embarrassment and acknowledge to yourself where they are coming from. Second, remain aware that every time we make a decision, small or large, dissonance will follow, and we will immediately start looking for evidence that the decision was the right one. The choice you didn't make will seem less and less attractive to you. That's why it's as important to keep an eye on disconfirming evidence as well as evidence that reinforces our certainties.

Cognitive dissonance doesn't seem very adaptive. Why do we have this tendency? Why do we have such a strong need to see ourselves as good or intelligent at the cost of deceiving ourselves about what's true?

Right! What can possibly be beneficial about it? Yet obviously it has been adaptive for most of human history. It's what lets us sleep at night, without worrying that we have done the wrong thing. It preserves our feelings of self-worth. It strengthens our commitment to our groups, making us willing to fight and maybe die for the "one true cause" or being part of the best ethnic group or nation. This is why most countries work hard to suppress dissonant evidence from history that they committed heinous acts. *Us?* Impossible.

What do I do with people who are on the complete opposite side from me? How do I reach across the aisle? How do I heal this rift? How do we even talk to this person?

It's the heartbreaking question of our time. Skeptics and scientists have dealt with this question forever and ever and ever—how do we convince people who don't accept the science, say, on vaccines or homeopathy? But over the years, the political polarization of America has worsened, and today many people say they would rather their son or daughter marry somebody from a different country or ethnicity or religion or even—God forbid!—an atheist than somebody from that other party. Families have always consisted of people with different political opinions, but nowadays rifts between relatives and friends have intensified. No surprise. When you think that somebody who holds an opposing view is not just misguided but *evil*, there's no arguing with you.

And so, how to reach across the aisle? How have any warring factions ended their hostilities? Talking, compromising, finding common ground and shared goals. Dissonance theory teaches that when you argue with the other guy, you don't do

it in a way that makes them feel stupid, as in "*What were you thinking? How could you vote for that person?*" Because their only response will be that they were thinking they were pretty smart to vote for that person, thank you, and now they will double down on that certainty. But if you ask your friend or relative *why* they believe as they do, while being willing to listen, you might actually learn something. You might learn they have doubts. You might find shared concerns. And you might learn that nothing will change their minds, any more than you will change yours.

along with a persuasive and well-informed leader, such as Angela Merkel, to avoid dividing and confusing the public and turning best-practice medical advice into political signaling.

There was a video of some anti-maskers in a local supermarket in California. They were pulling every reason in the book, including "It's my freedom." At some point I heard Jesus mentioned.

Note that the screaming woman in the supermarket was not at the beginning of the pandemic but many months later—time enough for her and countless others to have landed at the bottom of the pyramid of their anti-mask determination and loyalty to Trump. She reminded me of a wonderful cognitive dissonance study titled "When in Doubt, Shout." I think we all know this experience. I know I don't really have an argument against you; in this case, I really don't know how to rebut your incontrovertible evidence that masks will slow the infection rate and save lives. Therefore, I will just scream at you until you shut up. If I can shout you down, I don't have to examine whether my belief is justified or not.

But in terms of dissonance, the supermarket woman was perfectly predictable. What would it take for her—and for all the others who for months had been aligning themselves with Trump's views about the pandemic—that it's all going to go away like a miracle and we're going to get our economy back—to say, "I was wrong, and my beloved president was wrong"?

If I've read the work correctly, saying "I was wrong" or "I made a mistake," or changing my mind is one of the absolute hardest of all things to do.

Oh, yes. You know! One of the enduring lessons of dissonance theory is that the more time, effort, money, and heartache that we invest in something—a belief, program, friendship, relationship, marriage—the harder it is going to be for us to say, "Time to rethink this." Those relationships survive because of our ability to reduce dissonance—to focus on the things about the relationship that we enjoy and value and to minimize, ignore, forget, and trivialize information that is discrepant with our wishes for that relationship. This is the reason for the mysterious phenomenon that the minute a couple decides to divorce, they can't remember why they ever liked each other. What happened? Nothing happened. Nobody changed. It's just that their focus of attention shifted to all those negative things about the other person that they once overlooked but which now confirm their decision to leave.

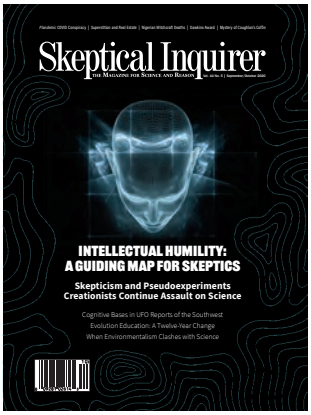
Or consider the many "he said/she said" misunderstandings in our lives and in the news. Most of us jump off the pyramid impulsively, believing one side or the other, and shutting out any dissonant evidence that we could be wrong. We assume one side is "lying." But people don't have to be *lying* to be *mistaken*. They may be misremembering, misperceiving, or self-justifying.

When you think that somebody who holds an opposing view is not just misguided but *evil*, there's no arguing with you.

When we understand how dissonance works, what it feels like, we can learn to put some space between the two cognitions that are dissonant and consider each on their merits. Years ago, Ronald Reagan agreed to go to the cemetery in Bitburg, Germany, for an official state visit involving the laying of wreaths to symbolize postwar reconciliation. When it turned out that forty-nine Nazi Waffen-SS officers were buried there, there was a furious outcry. Holocaust survivors and many others were outraged, but Reagan did not back down. A reporter asked Reagan's good friend Shimon Peres, then-prime minister of Israel, what he thought of his friend Reagan's action. Peres said: "When a friend makes a mistake, the friend remains a friend, and the mistake remains a mistake."

What a wise observation! Because what would the normal impulse be when a friend makes a mistake or does something we abhor? "Friendship over. That's it. We're done." Or we minimize the mistake or the harm our friend caused. "Let's just get on with it. The friendship is more important." What Peres was saying was we should take the harder, more thoughtful route: No. Let's consider both of these things and weigh them equally. And consider thoughtfully, rather than impulsively, what we want to do. We might even decide that living with dissonance is the best option. ■

Leighann Lord is the host of Skeptical Inquirer Presents and cohost of the *Point of Inquiry* podcast.



Science and Creationism

I agree with all the arguments in Brian Bolton's excellent article "The Continuing Assault on Science by Creationist Group Reasons to Believe" (September/October 2020), but I'm very unhappy when he uses "Christian faith" synonymously for the "word-for-word understanding of the Bible," especially the book of Genesis.

Bolton correctly notes that there are self-contradictory sections in Genesis—and there is a simple explanation for that. The text of Genesis 1:1–2:4 is younger than Genesis 2:5 but was put intentionally at the very beginning of the Bible because of its beauty (actually it is a poem!) and figurative language for the genesis of time (night and day, sun and moon) and space (ocean, land, and living things therein).

A central statement of Genesis 1 is that the world is a good one (repeated after each day). Genesis 1—like *Star Wars* episodes I–III—is also an essay about "Where does the evil come from?" and answers it simply with "Not from God." Genesis assigns it in chapter 3 to the free-will of men.

Thus, for me and—as far as I know—for the great majority of European Christians, there is absolutely no problem with evolution, because Christian faith is *not* identical with the literal understanding of Genesis (and the Bible, too)!

Greeting and best wishes from a longtime subscriber of Skeptical Inquirer.

Gerhard Hubmer
Marchtrenk, Austria

Brian Bolton replies:

Thanks to Gerhard Hubmer for his complimentary letter and the opportunity to clarify the issue of scriptural inerrancy and Christian creationism. I don't think my article equated "Christian faith" with the "word-for-word understanding of the Bible." In fact, Catholics and mainline Protestants reject the fundamentalist premise of biblical literalism and accept the fact of human evolution. But creationists regard the Bible as God's inerrant or perfect word.

Specifically, Reasons to Believe asserts that the Hebrew word for day includes the possibility of long periods of time, thus justifying their old-earth interpretation.

The young-earth advocates, Answers in Genesis, use Bible chronologies to support their claim of a 9,000-year-old cosmos. Intelligent design creationists evolved from a literalist Christian framework (based on the writings of Philip Johnson) to a godless exposition in the Dover federal court trial.

I think it is accurate to say that the Christian divide concerning human evolution aligns with the parallel separation on the subject of scriptural inerrancy. Both creationism and biblical literalism express a desire for absolute answers to life's major questions.

Brain Bolton's summation of creationist rationalizations concerning science is spot on. Unfortunately, it seems highly unlikely that this mindset will ever change. After decades of teaching college science and in retirement as volunteer in the public program at Lowell Observatory, I venture these observations. Roughly one-third of humanity seems hard-wired to deep-rooted convictions that an all-knowing god created everything and, most importantly, with purpose. No amount of reasoning or evidence to the contrary will change that belief, due to fear that our existence would otherwise be without value or meaning. In contrast, another third of people seem to be born with or amenable to critical thinking, which eventually leads them to either reject religion completely or at least become agnostic about it. The remaining people fall somewhere in the middle, either accepting religious practice for cultural or traditional reasons, without deep-rooted conviction, or they are neither curious nor concerned about the issue at all. These groupings, of course, are not absolute but a graded spectrum.

Not surprisingly, the most extreme examples of literal creationism I encountered have centered around biological evolution, the antiquity of the earth, and the cosmic big bang. The notion that we evolved through primate ancestors seems particularly egregious to most fundamentalists and somehow demeaning to the god in whose image we are supposedly created. Even to people who accept so-called "macro" evolution, only divine interference can explain mankind. Probably the most inane example of belief in biblical literalism is the following: While showing a man the moon through a telescope, I pointed out that the prominent crater Copernicus is a relatively young 800,000 years old. "How do you know that?" the man asked rather indignantly. "Through radiometric dating of soil samples returned by Apollo astronauts," I answered. He replied that he did not believe that, because according to the Bible, God created everything less than 10,000 years ago. When I asked what caused the lunar craters, he said that they are God's fingerprints when he made the moon from clay!

Klaus Brasch
Flagstaff, Arizona

Bolton's article on the assault on science is right on the money. Evolution has the distinction of being probably the only scientific theory that is provably correct. The proof premises can be stated:

- Mutations occur with every reproduction (which is why, except for identical siblings, no two people who have ever lived are exactly alike).
- Some mutations are beneficial for survival and reproduction (which should be obvious).

Because the theory of evolution relies on these two premises and on nothing else and both of these premises are demonstrably correct, the theory of evolution is necessarily correct also.

It is conclusively demonstrated by genetic analysis that everything that has ever lived on this planet is descended from one primordial organism that lived about four billion years ago (see Douglas L. Theobald's "A Formal Test of the Theory of Universal Common Descent," *Nature*, vol. 465, May 13, 2010, p. 219. Extended discussion can be found at www.talkorigins.org/faqs/comdesc).

Given these facts, anyone who denies evolution is simply displaying monumental and culpable ignorance.

The Bible is fiction. Because it is provable that a proposition can contain no information unless there exists a means of refuting it, it is provable that no information can exist about any god. Thus, every reference to a god in the Bible (or in anything else) is unverifiable.

Robert A. Saunders
Rohnert Park, California

Brian Bolton's article on Reasons to Believe apparently suggests that people can know "the mind of God" from merely human attempts of others to understand and write down perceptions and accounts of the superhuman. This is pride! Instead of trying to understand the mind of God

from examining the universe that most perfectly represents it, they compare scientific explanations to their interpretation of poetic descriptions by persons far removed in language and culture from themselves and pass judgment on them as inconsistent. Comparing relativity and quantum theory, scientists are more humble and allow that both seem to be true and it is our understanding that is incomplete. Reasons to Believe apparently does not have a suspicion that their understanding might be incomplete.

Suford Lewis
Natick, Massachusetts

Intellectual Humility

Lilienfeld et al.'s article on intellectual humility (September/October 2020) was interesting. But when reading it, it struck me that the entire article could be summarized by the first tenet of Bertrand Russell's *Liberal Decalogue*: "Do not feel absolutely certain of anything."

David W. Ball
Highland Heights, Ohio

CFI Investigations Group

The news article on the CFI Investigations Group (September/October 2020) mentions the experiment performed in 2018 at the Salton Sea "to demonstrate the curvature of the earth to a group of flat-earthers" that appeared in detail in an earlier issue. It brings to mind an experiment done in 1870 by Alfred Russel Wallace, the lesser known cotheorist of evolution through natural selection, in response to a challenge from flat-earthers to prove the curvature of a body of water—sort of the opposite of what the CFIIG did but with a wager involved.

Wallace drove three stakes into a canal some distance apart, all the same height above the water, and with a telescope clearly showed that the middle stake appeared higher than the other two. Sadly, for Wallace, he never did get the reward, and the only positive thing that happened, if it could be called positive, was that he lost a lot of credibility from the scientific community for engaging in such an effort. In contrast, the CFIIG seems to have gained credibility from the skeptical community.

Frank Archer
Delta, British Columbia, Canada

Coincidences

My act of reading Tony Pasquarello's "What Are the Chances?" actually produced several examples of his "coincidence plus" events.

I read it in September (my birth month), on the thirteenth (an article on superstition about thirteen was in the same issue), a Sunday (a day when my neighbors think I should be in church).

I am now fifty years old, and the article starts on page 50.

My father was born on December 13, 1942 (12/13/42), and I read the article during the twelve o'clock hour. There's thirteen again, and Douglas Adams fans know the cosmic significance of "42." I might have been reading it at 12:13—there's no way to tell.

And, the previous day, I explained roughly the same thesis to someone, in the context of billions of virus-infected cells making seemingly unlikely mutations almost certain.

I'm tempted to look up the dimensions of the Great Pyramid, just to see how many C+ events related to my day's reading I can find there. Maybe I'll write some prophecies …

Scott Bates
Mobile, Alabama

Your readers might be interested to know that Paul Kammerer, the neo-Lamarckian who is the "hero" of Arthur Koestler's *Case of the Midwife Toad*, wrote a monograph on coincidences—"Das Gesetz der Serie" (1919)—arguing that "coincidences" followed a wave-like pattern reflecting a fundamental law of the universe; the book influenced Jung's thinking. It has never been translated into English, but the full text in German is available online. Koestler, as many of your readers will know, had a contrarian streak, was sympathetic to paranormal concepts, and took Kammerer's "law of seriality" just as seriously as he took his ideas about evolution.

Arthur M. Shapiro
Davis, California

The State of Our Nation

Kendrick Frazier should read his own magazine before he writes any more screeds such as "The State of Our Nation" in the September/October 2020 issue of Skeptical Inquirer. It was long on emotion and short on facts. The United States does have leadership in the COVID-19 pandemic, including Dr. Fauci, key advisor to President Donald Trump, whom Frazier himself recommends in the same issue. Frazier simply doesn't like Trump and chooses to ignore Trump's accomplishments. From the facile talking points he parrots, Frazier obviously only watches liberal news media that confirm his own biases. What different leadership would Frazier prefer? Perhaps Nancy Pelosi belittling Trump's warnings about the pandemic in January as being a distraction from her bogus impeachment. Or Joe Biden calling Trump's travel restrictions "hysteria, xenophobia, and fear-mongering."

John Clinger
Bella Vista, Arizona

Your magazine claims to be free from politics, yet I received my issue in the mail, turned to page 4, and Editor Kendrick Frazier is

[FEEDBACK

The letters column is a forum on matters raised in previous issues. **Letters should be no longer than 225 words**. Due to the volume of letters we receive, not all can be published. Send letters as email text (not attachments) to letters@skepticalinquirer.org. In the subject line, provide your surname and informative identification, e.g.: "Smith Letter on Jones evolution article." Include your name and address at the end of the letter. You may also mail your letter to the editor to 944 Deer Dr. NE, Albuquerque, NM 87122.

ranting about the president and his cronies. Is that not taking a political stance? I could care less about Frazier's opinions and would rather not read them.

To bolster his point, he brings up Dr. Fauci. In his Quoteworthy piece ("Dr. Fauci on Antiscience Bias: 'It's Amazing the Denial There Is,'" p. 9), Fauci states that science isn't always correct. Yet Frazier rails against those who question an aspect of science that is far from complete. (Not to mention one doesn't have to do much research to find a boatload of articles questioning Fauci's accuracy and motives.)

I just wish I could pick up a magazine in which I could read facts rather than hiding behind an editorial to advance one's agenda!

Dave DeVenzio
Mars, Pennsylvania

Kendrick Frazier responds:

We received several other letters in this vein, including at least one canceling his subscription. I acknowledge them and the strong emotions behind them. We are in divisive times. We at SI have spent four-plus decades exposing and excoriating pseudoscience (and antiscience) from every source imaginable, even recently from some Nobel laureate scientists, but when we point out that it is now coming from our president, that is "politics." I can do no better than echo our colleagues at the distinguished journal Science. *In regard to similar complaints that they should just "stick to science,"* Science*'s editor-in-chief, H. Holden Thorp (October 16, 2020), responded, "We are sticking to science, but more importantly, we are sticking up for science."*

Cognitive Biases?

The article: "Magic in the House of Rain" by Matthew J. Sharps, et al. (September/October 2020) seemed to miss several points in articles about "intellectual humility" and "skepticism and pseudoexperiments" in the same issue. Most glaring was the bold type statement: "About one third of modern adults, people who get to vote, thought these two dust specks were alien starships or something unknown but similar."

The authors considered a study population consisting of twenty-one male and seventy-six female recruits from the psychology department of a California university to be representative of the modern American voting adult population. The assumptive arguments purporting to validate such consideration leave much to be questioned. Even more troubling is the implied negative judgment about one-third of the American people who get to vote. Such assumptions and statements suggest hubris and a conscious attempt to denigrate the voting population in general.

Jack Chowning
Mannford, Oklahoma

Matthew J. Sharps replies:

The article was in no way an attempt to "denigrate the voting population in general." Voting and the electorate were not the topics of this article in any way.

As we stated, the population from which this sample was drawn is an extremely multicultural one from an area of great economic diversity. Articulation agreements of the university result in additional academic diversity, further supporting some generalization of this sample to the population at large. Admittedly, this population is younger on average than the general population. With this limitation, we stand by the statement that this work resulted in a reasonably valid sampling of the current American population, within obvious limits and to the degree resources permitted. The experimental and statistical methods were standard for a study of this type. We stand by the conclusions of this research, within the obvious limits of the scope and domain to which it was confined and intended.

African Witchcraft Beliefs

As an anthropologist with considerable African experience and a long interest in witchcraft beliefs, I must take issue with two main points in Leo Igwe's news and comment article in the July/August issue (pp. 5–6). The functionalist explanations of witchcraft beliefs as a "socially stabilizing mechanism" are not and never have been "dominant" in social science. In normal times, fear of suspicions of witchcraft do indeed oblige people to mind their social manners—and this function applies universally. But witchcraft in Africa (as worldwide) has always been recognized

as profoundly evil and really dangerous, especially in times of social stress when mob-generated witch hunts were and are deadly. The best accounts of African witch hunts are by anthropologists.

And in such times, when fears of witchcraft displace principles of reason, the best course for the agent of change is to work within the belief system; for example, to persuade both accused and accusers that the witchcraft power has been nullified—the way a "witch doctor" works. Persuading people that such beliefs are false, mere "superstition," requires long and patient systemic education, again within their principles of cause and effect. The dilemma is illustrated in Monica Wilson's classic 1940s account of persuading a Pondo schoolteacher that typhus is carried by a louse—but then being stymied by his question, "But who sent that louse? Why did it bite that man, and not another?"

Phillips Stevens, Jr., PhD
Associate Professor of Anthropology Emeritus
University at Buffalo, SUNY
Buffalo, New York

First Drugs?

I much appreciated Harriet Hall's informative article on the origins of drugs, but I would like to take issue with the statement "People have been self-medicating with medicinal plants for at least 60,000 years … . The first users must have been either incredibly brave or incredibly foolhardy." If you have ever seen a dog eat greens to cure indigestion or a cat eat catnip to improve its mood, you have had a clue to the fact that almost all animals self-medicate with plants. People have a common ancestor with chimpanzees, who use medicinal plants regularly. It is almost certain that no bravery or foolhardiness was involved: the first humans just kept doing what their ancestors had been doing for eons.

John Greene
Penticton, British Columbia, Canada

Harriet Hall replies:

Whether animals actually self-medicate is a controversial question. There could be other explanations for the behaviors we observe. Dogs have long been thought to eat grass to induce vomiting, but grass-eating is followed by vomiting in only 25 percent of cases. And cats enjoy the effects of catnip but not because their mood needs improving. Early humans who followed the practices of their primate ancestors made two assumptions: that the plants were therapeutic and that they would be equally safe and effective in a different species. Neither assumption is warranted. And humans have tried to self-medicate with many plant remedies that were never used by any other animal. Whether a human ancestor or today's purchaser of the latest "miracle" herbal product, someone had to be the first to try a remedy that had never been properly tested. They had no evidence that it was safe or effective, and in my opinion that makes them either brave or foolhardy (or both).

Thirteenth Floor Superstitions

Regarding Stuart Vyse's column about superstitions about the thirteenth floor (September/October 2020), my father was an architect and designed many high-rise buildings during his career. I was with him in one of his designs as a youngster and noticed the building had no thirteenth floor. I didn't think he was superstitious and asked him why. He told me that, first of all, it is up to the customer—that is, the building developer—but that people will pay more for higher numbered floors. Often when pricing new condo units with the same floor plan, there would be a base price for the bottom units and an increment for each numerically higher floor. That gave an extra increment in price to the fourteenth and higher floor units.

Mark Rognstad
Kailua, Hawaii

Vyse's article reminds me of the fact that President Ronald Wilson Reagan's California address was 666 St. Cloud Road. It caused such controversy that they had to rename it to 668 St. Cloud Road. Of note was the number of letters in his name: Ronald Wilson Reagan, six letters in each name for 666.

David W. Tuthill
Dallas, Texas

Reber Book on Consciousness

I haven't read Reber's book *The First Minds*, so I'm going on the details of Peter Kassan's review (September/October 2020).

It's worthy to note that Kassan makes much of Reber's extending the notion of consciousness to single cell organisms. But Daniel Dennett has being putting forward a similar view for years, even going so far as to grant a simple thermostat a minimal element of intentionality, for which he has received much mockery. I accept that the details of Reber's argument are different, being based on biological structure so that unlike Dennett he doubts the possibility of machine consciousness. But the parallels should be noted.

Good issue of a good magazine.

David Michael Sherwood
Fliwick, England
United Kingdom

The idea that microbes have sentience is radical to say the least, and I am sure the great majority of biologists would disagree completely. Microbes are programmed by their DNA to move, sense their environment, and respond accordingly, sometimes including some built-in flexibility. But to suggest anything like a mind or the idea that there is something "mental" about being a bacterium is totally unfounded and farfetched in the extreme. To conclude that this book is a worthwhile contribution to the literature on consciousness strikes me as absurd. As an animal behaviorist, I hold that anything approaching consciousness is to be found only in the animal kingdom and only in a small fraction of that huge assemblage. Sea squirts, worms, sponges, spiders, and even fish and frogs are almost certainly not conscious of their existence as individuals and have no sentient sense of self.

David Zeigler
Wimberley, Texas

Y2K Precautions

I object to Benjamin Radford employing double quotes when referring to the Y2K bug (July/August 2020), as the quotes suggest that this issue was not necessarily real or important. It was not "all over nothing" and to a great extent we, in IT, knew what would happen if it was not addressed by computer systems in use by financial organizations such as banks, savings and loans, insurance companies, and perhaps other organizations. We knew because we had seen such problems in the past, in both application code and system support code, as date routines failed or dates were set incorrectly. Now whether other industries (such as utilities) would have had problems if they had not addressed Y2K, I cannot say, as I have no knowledge or expertise in those areas.

For financial institutions, fixing the Y2K bug ahead of time was not unnecessary. We knew to some extent what kinds of problems the banks and insurance companies would have. It might not have been Armageddon, but it would have been a disruption in financial activities for several days, maybe weeks.

Joe Dalessandro
Philadelphia, Pennsylvania

Correction on Pauling

In his letter to us on "The Nobel Disease" (September/October 2020, p. 61), Alan Harris correctly wrote, regarding Linus Pauling, "the year was 1962, when he had just won his second Nobel, the Peace Prize." That was incorrectly changed to say he won two Nobel Peace Prizes. Pauling's first Nobel Prize was in chemistry.

Skeptical Inquirer

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