A Revolt Against Expertise: Pseudoscience, Right-Wing Populism, and Post-Truth Politics

TANER EDIS

ABSTRACT

While concern about public irrationality and antiscientific movements is not new, the increasing power of right-wing populist movements that promote distrust of expertise and of scientific institutions gives such concerns a new context. Experience with classic pseudosciences such as creationism, and the long-running efforts by defenders of science to oppose such pseudosciences, may also help us understand today's post-truth populism. The politics of creationism and science education in the United States and in Turkey does not, however, suggest easy answers. Moreover, there are important features of politics in liberal democracies that drive a populist backlash, which makes it counterproductive for defenders of science to call for deference to all forms of expertise claimed by professionals. There is a danger that the rhetoric of reason that is used to defend science will become part of a more general apologetics for an unsustainable status quo.

WORK TYPE

Article

ARTICLE HISTORY

Received:
29–May–2019
Accepted:
31–October–2019
Published Online:
24–November–2019

ARTICLE LANGUAGE

English

KEYWORDS

Irrationalism
Pseudoscience
Right-wing Populism
Religious Nationalism
Expertise

T. Edis (✉)
Truman State University, United States
e-mail: edis@truman.edu

Disputatio. Philosophical Research Bulletin
Vol. 9, No. 13, Jun. 2020, pp. 00-00
ISSN: 2254-0601 | www.disputatio.eu

A Revolt Against Expertise: Pseudoscience, Right-Wing Populism, and Post-Truth Politics

TANER EDIS

§1. Rising tides of irrationality

ACTING ON THE PERCEPTION THAT AMERICAN PUBLIC discourse was becoming diverted by irrational, pseudoscientific, and even antiscientific convictions, a group of academics and public intellectuals felt a need to take a stand. They organized a conference, issued statements, and received attention from the press, particularly *The New York Times*. Paul Kurtz, the philosopher who took on a leadership role, denounced "the current rejection of reason and objectivity," going on to observe that early in the twentieth century, "cults of unreason" tied to fascist and totalitarian forms of political power had done immense damage. The present was showing some ominous signs as well: "Today, Western democratic societies are being swept by other forms of irrationalism, often blatantly antiscientific and pseudoscientific in character" (Frazier 1996).

The year was 1976. Kurtz and his associates, fellow skeptics such as James Randi and Martin Gardner, founded CSICOP, the Committee for the Scientific Investigation of Claims of the Paranormal. Concern about astrology was an important impetus leading to CSICOP, and the early years of its criticism of public irrationality also addressed matters such as Velikovskian fantasies, creationism, biorhythms, pyramid power, classic lights-in-the-sky UFOs, and media-star psychics such as Uri Geller. Sometimes pseudoscience would become apparent even in established academic circles, such as psychoanalysis. And occasionally, physical scientists would go wrong. They might prematurely announce mistaken discoveries such as N-rays in the first decade of the twentieth century, or, later on, cold fusion. They might naively think that they could test psychics without consulting conjurers on how to guard against fraud. But by and large,

pseudoscientific notions lived on the fringes of mainstream institutions, as species that found niches in a mass media ecology of ideas. Coming after Vietnam War-era critiques of science as an adjunct of militarism and big business, and a flourishing of interest in unconventional religious beliefs, CSICOP found a place for itself as a voice of established science.

Some of CSICOP's original concerns may seem quaint today: it has been a while since biorhythms or pyramid power has attracted much attention. Nonetheless, questions about pseudoscience continue to have academic interest. There are many dubious beliefs rejected by mainstream science, whose proponents claim scientific support while denouncing the closed-mindedness of scientific institutions. Fake science, fringe science, or pseudoscience have always been difficult terms; they often mean little more than failing a test of "family resemblance" with defining examples such as physics or biology (Pigliucci and Boudry 2013). And yet, philosophers of science wondering how to separate science from non-science have to look at various dubious beliefs as test cases. Physicists may be curious about paranormal claims that might probe the limits of physics. Psychologists exploring the fallibility of testimony and studying human propensities to believe in supernatural agency find a rich source of data. And social scientists curious about how ideas spread through modern media find no end of raw material. After CSICOP's (since 2006, CSI) foundation, American skepticism has found a non-academic following as well. Especially where alternative medicine is concerned, science-based criticism has an important role in consumer protection. There is a small movement of skeptics outside the academy, extending to an international network of skeptical organizations. *The Skeptical Inquirer*, CSI's periodical, appeals to a public beyond specialists. Kurtz's original concerns about widespread irrationality, with overtones of fascism, however, have seemed overblown.

Moreover, it is questionable whether there ever was a rising tide of irrationality in the 1970s; episodes of alarm about public irrationality appear to come periodically, with little justification (Higgitt 2012). Polling tends to indicate that there are always a number of paranormal or pseudoscientific topics that command a public following, but also that particular beliefs rise and fall in popularity (Nisbet 2006). Many of us will believe in some kind of psychic powers, although table-tipping or channeling are long past their prime. UFO sightings and abductions will decline, but conspiracy theories will flourish. Iridology will fade, but celebrities will endorse other forms of health-related foolishness that will become fashionable for a season. Skeptical academics, it seems, can count on being well-supplied with test cases. And the work of skeptical consumer advocates is never done.

§2. Serious threats

Even if there is usually plenty of science denial to go around, the significance of the beliefs in play can change. After all, in 2016, "post-truth" was named "word of the year" by the Oxford Dictionaries (Johnson 2016) because disregard for truth as understood by scientific and journalistic institutions had become politically important. Today, disregard of science does not just mean opposition to vaccinations, which is harmful enough, but climate change denial by large corporations and election-winning political parties. Conspiracy theorists are not just convinced that the American government is hiding evidence of space aliens; conspiracy theories have started to seriously affect political discourse. In the United States, many Republicans worry about a Deep State that schemes to block president Trump; many Democrats think the Trump presidency is a Russian plot. In Muslim countries, conspiracy theories about the CIA, Jews, or Freemasons are never far from the popular political imagination. And so it goes across the globe. The internet lowers the cost of dissemination for crank notions, and the echo chambers and information bubbles promoted by social media give pseudoscience an ideal environment to flourish. We even have political actors who flood social media with disinformation, not to convince readers but to induce cynicism about attaining any reliable truth (Tüfekçi 2017).

In the 1970s, then, science denial might have meant something frivolous — pyramid power or biorhythms. The darkest example of the rejection of expert opinion would have been corporate-sponsored misinformation that obscured the health consequences of tobacco use. In the 2020s, science denial leads to paralysis in the face of existential threats, from global warming to biodiversity collapse.

Our overall political environment might be a particular cause for concern. After all, right-wing populism is on the rise across the globe: Trump in the US, growing nationalist parties in Western Europe, illiberal nationalists such as Orbán and Putin in Eastern Europe, religious nationalists such as Turkey's Erdoğan who have enjoyed power in the Islamic world, Modi and Hindu nationalism in India, Bolsonaro in Brazil, and so on. There is no coherent ideology shared by such disparate figures. Still, there are some common themes. They emphasize an in-group identity and treat some out-groups as a threat. They often idealize a patriarchal social order. Many are linked to mafia-style business practices. But most notably, right-wing populists are closely associated with our post-truth moment, from the pseudoscientific and pseudohistorical narratives that they often promote to support their nationalism to the conspiracy-minded fashion in which they often characterize their opposition.

One of the most obvious traits of right-wing populism is opposition to a "liberal elite" that derives its power from its education and professional status. It furthers its revolt against expertise by deploying right-wing media to undermine a shared sense of factual truths. And in turn, professionals such as elite journalists respond by denouncing "the death of truth"; some even join the conspiratorial thinking by attributing vast influence to Russian social media manipulation (Kakutani 2018). In any case, populists mobilize resentments against experts such as annoyance with bureaucracies and rules, presenting an alternative to the centrist antipolitics of the past few decades and attracting considerable electoral support.

In such circumstances, organizations such as CSI, and any of us who are concerned about pseudoscientific and antiscientific beliefs, may find a renewed sense of mission (Thompson and Smulewicz-Zucker 2018). Far from just silliness such as pyramid power, post-truth politics presents a worthy dragon to slay. After all, a revolt against expertise that comes as environmental catastrophe looms is a serious threat to civilization. Furthermore, right-wing populism might be an especially useful dragon. Science still has an elite, white, male reputation. Fighting the right could mean joining forces with feminists, anti-racists, and others demanding social equality, underscoring the universal nature of science.

§3. A matter of authority

When skeptics and scientists make a case for deferring to scientific views, they often refer to ideals concerning democratic participation. Drawing on liberal democratic political philosophy, they highlight the need for an informed electorate. Citizens of a liberal democracy enter the political arena with conflicting interests. Negotiating between these interests, however, depends on a set of facts that all can agree upon. Without this common ground, reasoning together becomes impossible. Therefore, an environment where conspiratorial thinking has eroded trust, and where facts are completely filtered through partisan commitments, undermines democratic deliberation.

Science, and indeed all our academic disciplines, are supposed to supply these common facts. While fallible, expert consensus as determined through politically independent institutions such as universities and peer-reviewed academic journals represents our best collective effort at determining the relevant facts. If, for example, there are public concerns about the health effects of eating genetically modified organisms, consulting scientists is an important part of the process. If GMOs are pronounced safe, this does not completely end the political negotiation; for example, the science about food safety may have

very little to say about whether GMO technologies give too much power to large-scale agribusiness. Nonetheless, what amounts to superstition about "unnatural" foods should not drive policy decisions (Blancke et al. 2015).

Such views about the cognitive authority of scientific expertise can be further developed. Organized resistance to science in favor of paranormal and supernatural convictions often appears in a context of conservative religiosity, and liberal political philosophy has long addressed the difficult problems associated with combining public reasoning with non-negotiable faith-based practices. Usually, secular liberals argue that scientific expertise must enjoy a privileged position. Jürgen Habermas, for example, thinks that liberal democracies should be more welcoming toward religious believers, making better use of the moral and community-forming resources commanded by religion. However, he also states that "religious citizens must develop an epistemic stance toward the internal logic of secular knowledge and toward the institutionalized monopoly on knowledge of modern scientific experts," learning to defer to science (Habermas 2008, p. 137). According to most liberal thinkers, explicitly antiscientific or pseudoscientific beliefs should have even less public standing in a modern technological civilization.

Framing the discussion in terms of reliable facts, however, can miss how movements that promote distrust in science often put emphasis on cognitive *authority*. After all, a defense of established expertise is also a conservative act, shoring up the power of existing institutions and recognized authorities. Especially today, when claims of expertise are often embedded in a technocratic or administrative context, people who do not trust the existing bureaucratic structures will not always consider assertions of scientific authority legitimate. Moreover, technocratic authority is typically associated with the interests of a professional and managerial class. Presenting science as a reliable institutional authority, then, invites right-wing populist distrust of liberal elites. Skeptics based in scientific and academic institutions are therefore not always well-positioned to defuse populist mistrust of science.

Since populism fosters a conspiratorial mindset in which "who benefits?" is often the most salient consideration, it is not sufficient to praise science as an idealized intellectual enterprise. Actual expertise and real institutions have to be defended. And that raises difficult questions. Applied biological research, such as that on GMOs, is funded through industry. The physical sciences attract both public and private funding because they promise military and commercial applications. Even in an academic context, it can be tempting to emphasize such constraints over the reasons scientists put forth to support their favored

explanations — leading to the infamous "Science Wars" (Ashman and Baringer 2001) where academics outside of natural science rejected scientific claims to advance knowledge and produced examples such as sociologists sympathetic to intelligent design creationism (Fuller 2008). It would concede too much to conspiratorial thinking to suspect that institutional features always corrupt scientific claims — physicists succeed in delivering bigger bombs *because* they get the physics at least approximately right. Nonetheless, while defending science as an intellectual structure and science as an institution is not the same, it is hard to draw a sharp line between the two. Constructive institutional criticism of science is made even more difficult in today's political environment that blurs the distinction between institutions and intellectual enterprises as effectively as the academic Science Wars.

Other institutions related to science, such as higher education, also are politically complicated. After all, for many, perhaps the majority of students, a university education is primarily a quest for credentials that let them join the professional and managerial class. The more prestigious the institution, the better the prospects for personal advancement. So very often, universities are institutions for reproducing elites. As such, they are naturally suspect from a right-wing populist perspective. Suspicion of elites who shape institutions for their own benefit naturally shades into distrust of the expertise that universities are supposed to embody.

Scientists and skeptics do not want to encourage conspiratorial thinking. Nonetheless, confronting a revolt against expertise also means raising unsettling questions. How much does defending expertise mean defending the current shape of our institutions? It is hard to imagine that the status quo introduces no distortions of knowledge. Fully identifying intellectual enterprises with any set of institutions seems risky. And intellectual life typically calls for some distance from power, some ability to criticize, so as to avoid becoming apologists for any status quo.

§4. The example of creationism

Some historical perspective may help us judge our post-truth moment more accurately. After all, right-wing populism is not new. Comparisons between today's populist right and the European fascism of the 1930s have become a staple of media commentary, identifying parallels in the aftermath of a financial crisis, the delegitimization of liberal elites, and a propaganda apparatus that deals in conspiracy theories and takes control of the media environment. However, today is also different than the 1930s in important respects. Disregard for truth

today flourishes in a freewheeling internet environment rather than a climate of totalitarian censorship. Fascism was most notable for its violent suppression of left-wing politics and the labor movement. It was characterized by mass mobilization and enjoyed support from elites fearful of revolutionary change, neither of which is the case with today's populism (Traverso 2019). Indeed, today's "age of acquiescence" (Fraser 2016) has nearly no left opposition to speak of, let alone labor unrest or communist organizing. Therefore, a better point of comparison might not be fascism, but the varieties of religious nationalism that have been noticeable since the late twentieth century: movements such as the Religious Right in the United States, the business-friendly moderate Islamism that has become dominant in many non-Arab Muslim countries, and the Hindu nationalism that has come to power in India.

Religious nationalism has many of the features that worry skeptics and scientists: it is a populist revolt against secular expertise, aiming to delegitimize liberal elites, that draws on and supports religiously-colored pseudosciences. Religious nationalists have also appealed to ideals of patriarchal authority, enjoyed strong alliances with parts of their national business communities, and have become political forces through free elections. The ways that religious nationalists challenge the scientific community — examples such as creationism among Abrahamic monotheists or quantum mysticism among Hindus — are long-standing, going back many decades. If we take such cases of right-wing populism as our model, we can also draw on the extensive experience of scientists and skeptics trying to counter the antiscientific aspects of such movements.

Creationism is a particularly useful example. Largely but not exclusively due to religious reasons, large numbers of people are uncomfortable with evolution. They may therefore be drawn to various anti-evolutionary views that claim evidence for divine creativity rather than blind natural processes. Such creationism ranges from an emphasis on literal interpretations of sacred texts to the intelligent design movement that presents a more scientific image. In any case, varieties of creationism are classic pseudosciences that require denial of vast areas of natural science, in physics as well as biology. The institutions supporting creationism are structured so as to defend particular supernatural beliefs rather than to learn about how the world works (Edis 2018), therefore much of the case for creationism depends on portraying established scientific expertise as corrupt. Indeed, creationist beliefs are closely related to conspiracy theories in the ways they evade scientific criticism (Edis 2019). And creationism is certainly not an artifact of the social media age. The connection between religious populist movements and creationism has always been very clear; indeed, when creationists have tried to broaden their constituency beyond conservative monotheists

already suspicious about evolution, as with the intelligent design version of creationism, the attempted broadening has had little success.

In the United States, creationism has been associated with the Religious Right: creationists have often echoed themes common to American right-wing populism that might otherwise seem out of place in an ostensibly scientific dispute. For example, the Discovery Institute, which is the leading promoter of intelligent design creationism, can host a polemic against a Deep State obstructing president Trump alongside its usual complaints about underhanded "Darwinists" (Powell 2019). The more grassroots-oriented young-earth creationists are often devoted to an overall political and cultural project of re-establishing divine authority over human institutions, in an echo of the informal Protestant establishment of the nineteenth century (Sehat 2011). And as part of this project, it is not just the natural sciences that appear as obstacles. Creationist leaders often state that evolution has evil consequences — it is part of a "long war against God" (Morris 2000). The erosion of divine authority produces corruption in many institutions associated with the professional and managerial class, from social science to regulatory agencies.

For religious conservatives, education is a special realm of concern. Liberals often hope education will cultivate appreciation for secular expertise. But for conservatives, besides imparting marketable skills, education is also supposed to reinforce religious and ethno-nationalist loyalties. Evangelical Protestants have, in their recent history, often been closely entangled with American business culture. Therefore, while market competition is supposed to be the appropriate realm of freedom, especially for men, this competition has to be disciplined by a moral framework that a permissive liberal approach cannot provide. Religious conservative conceptions of education emphasize knowledge embedded in a moral community and approach professional claims to neutral expertise with suspicion (Edis 2020).

Liberals, including most skeptics and scientists opposed to creationism, are apt to see this emphasis on authority, loyalty, and traditional social roles as authoritarian in nature. Religious conservatism, however, is often genuinely populist, and regularly draws on themes such as common citizens resisting top-down impositions by an unelected, perhaps even illegitimate stratum of bureaucrats and self-appointed "politically correct" morality police. To oppose these liberal elites, religious conservatives act as a legitimate interest group in a representative democracy. Indeed, they do not just apply political pressure to existing institutions, but also construct conservative parallel institutions. American public science education, for example, is constantly involved in legal

battles to keep creationism out of schools, and public pressure in conservative localities notoriously leads to a lack of emphasis on evolution in the classroom. At the same time, more explicit challenges to secular expertise are expressed through private venues such as Christian academies and institutions such as Liberty University. Religious populists simultaneously resist secular authority and try to build up their own, alternative forms of institutional authority.

Populist resistance to evolution — understood as an imposition by a culturally alien, secular elite — is not confined to the United States. The most successful forms of creationism have appeared in Muslim countries (Edis 2007, Hameed 2008). Indeed, one of the most notable examples of creationism not just finding a popular audience but making inroads into public education comes from Turkey. Religious populism, which, in an alliance with business interests has become a dominant political force in Turkey during the last few decades, has opposed evolution as part of a conservative culture war.

Islamic varieties of creationism are broadly similar to the more familiar Christian versions in their opposition to evolution, particularly human evolution. There are, naturally, many differences as well — for example, Muslim creationists are far less concerned about the age of the Earth than their conservative Christian counterparts, and flood geology is virtually unknown. There is also considerable diversity among Muslim countries in the degree which educational establishments are open to evolution (Edis and BouJaoude 2014). What makes the Turkish example particularly interesting is the extensive penetration of anti-evolutionary views into the academic as well as popular media environment.

Turkish conservatives, including the ruling moderate Islamists, usually think of Turkish politics as a struggle between secular modernizers and a previously excluded pious periphery. The secularists, rooted in military and bureaucratic elites who survived the Ottoman Empire and founded the new Turkish Republic in the 1920s, used to include most of the educated elite. Islamists have seen themselves a part of a generations-long project of resisting secular authority and restoring the sacred beliefs of the vast majority to their rightful place in public life. Scientific ideas that are associated with materialism and secularism, such as evolution, have naturally become targets. Creationism, along with certain pre-modern alternative medical practices such as cupping and the use of leeches, has come to enjoy an aura of cultural authenticity, an edge derived from resisting westernization. The conspiratorial thinking characteristic of today's populism also feeds into Turkish creationism, where, according to some of the most visible creationists, the theory of evolution is part of an elite-driven Masonic conspiracy intended to undermine true religion (Solberg 2013, pp. 75–93). For religious

conservatives, submitting to divine authority has been the best way of resisting the authority of inauthentic secular elites.

The Turkish revolt against secular expertise has also targeted education, and has also reinforced parallel institutions together with putting pressure on secular institutions. In Turkey, there has been a long-standing public religious education system alongside secular public education. Together with private schools and student support systems associated with religious brotherhoods, this parallel system has been strengthened, and previously secular public schools have become much more entangled with religion. Turkish public education has been remade in a religious populist image, reflecting the ideological preoccupations of the ruling Islamists (Eroler 2019; Yıldız, Kormaz, and Doğan 2019). Turkish desecularization has also affected the institutions of science and higher education. The institutions of the state that are responsible for funding and supporting science have come under firm conservative control. And especially in newer, provincial universities subjected to a strong Islamist influence, opposition to evolution has become academically mainstream. For example, in 2018, Atatürk University hosted the "Second International Congress on Creation in the Light of Science," where academic scientists and theologians from all over Turkey, plus a few international guests, denounced evolution and defended Muslim traditional beliefs over two days packed with four parallel sessions (Bilim ve Yaratılış 2018).

Much about the Turkish form of Islamic creationism is very similar to the American Christian example. But in the Turkish case, right-wing populist resistance to elite expertise has been much more successful. Turkish right-wingers have not only built alternative institutions and supported pious intellectuals affirming popular beliefs, but in a political environment shaped by decades of conservative rule they have made considerable progress towards becoming the new mainstream. Right-wing populism has made few inroads into American educational institutions and intellectual high culture. In contrast, in Turkey and in some other populous middle-income Muslim countries such as Malaysia and Indonesia, religious populists have established an alternative, pious form of modernity (Edis 2016).

§5. Combatting populist pseudoscience

Creationism is a useful example because it highlights how much concerning pseudoscience in our "post-truth" context is not new. Skeptics and scientists have been concerned about populist revolts against expertise for many decades. Moreover, defenders of science can draw on extensive experience fighting

antiscientific attitudes fueled by right-wing populist political movements. We might already know something about what works and what does not.

We already know, for example, that when fact claims also become markers of personal identity and belonging, an academic style of critique is rarely very effective on its own. Even educated people often react to challenges by forcefully reaffirming their beliefs and deploying motivated reasoning to defend them (Kahan 2017). There is much more at stake in a contest between evolution and divine creation than an explanation of biological patterns; much about conservative religious versus secular ways of life are implicitly part of the discussion. Even if we would like scientific evidence such as the fossil record to be decisive, very often the public debate is not structured to properly weigh such evidence. And in any case, for almost all non-experts, the contest primarily concerns whose claims to expertise to accept.

Creationism is but one of many such examples. In India, instead of creationism we have quantum mysticism and astrology, where such pseudoscientific ideas are supported by claims of cultural authenticity and links to Hindu nationalist politics, and even make inroads into scientific institutions (Nanda 2003, Geraci 2018). The difficulties associated with confronting claims linked to personal and political identity are similar. In illiberal-democratic Hungary, the right wing in power promotes a nationalist pseudohistory rather than pseudoscience. There are powerful reasons to accept narratives that serve religion or nationalism, which cannot be brushed aside by invoking naïve concepts of rationality and trust in expertise (Edis and Boudry 2019).

In political environments where fact claims become tokens of almost tribal identities, many of the instinctive responses of skeptics and scientists do not work well. Calls for improved science education, for example, are not very useful. Few political actors oppose improved science and mathematics education, as STEM fields are seen as good investments in human capital. Neither the Christian Right nor Islamists oppose applied science; indeed, they tend to be very enthusiastic about technology. Positive views of technology, however, do not necessarily support a broad-based education promoting an understanding of basic conceptual frameworks of modern science such as quantum mechanics or Darwinian evolution. An emphasis on narrow but marketable technical competences is much more likely. Indeed, in Turkey, some religious organizations have been very successful in preparing students to excel in business and applied science fields, while supporting a vision of science in which an intelligently designed universe comes to the fore. Evolution is critical for a deeper understanding of biology, but very few students will be in a position where

knowledge of evolution will directly translate into a market advantage. Education policies driven by economic concerns will do little against pseudoscience or pseudohistory that imposes few obvious costs but visibly supports conservative religious or nationalist goals (Edis 2016, chapter 3).

Confronting pseudoscientific claims outside of formal education is also risky, as it depends on a mass media notorious for amplifying attention-grabbing claims. Elite media dominated by well-educated journalists are likely to express trust in expertise that is rooted in the same professional and managerial class: high-end American media, for example, can be counted on to dismiss creationism. But in an environment where resource-intensive journalism is rapidly shrinking and newspapers are losing readership, such support for science is no longer as effective. Moreover, right-wing populism is also notorious for delegitimizing media outlets that are not ideologically sympathetic. Instead, populists produce their own alternative media environment. In Turkey, media have become highly concentrated in ownership, and the business interests investing in media have also been close to the Islamists in power. The declining old-line secular media might support evolution, but they can only preach to a continually shrinking choir.

Populists might also be stopped by nondemocratic means. In the United States, anti-evolution views are kept out of public education through the courts, who have reliably ruled that creationism in science classes would violate church-state separation. In Turkey, the initial opposition to creationism pointed out that it was a threat to official secularism. Indeed, Turkish opponents of religious populism used to hope that either the courts or the military would intervene in politics to re-establish secularism and rule Islamist tendencies out of bounds. In the American case, victory in the courts harbors a potential for backlash. After all, judicial interventions feed the populist narrative of the desires of common citizens being thwarted by elite machinations. In Turkey, unsuccessful calls for intervention have only hardened Islamist tendencies to perceive secularist opposition as antidemocratic and illegitimate. In any case, even if the judiciary can impose elite legal interpretations for a while, it cannot protect science and science education in the long term if right-wing populism continues to be successful.

One possibly more effective way of opposing creationist pressures is to be more political. Advocates for science can seek allies, particularly among constituencies who are already inclined to distrust populism. In the United States, disputes over creation and evolution can be turned into a confrontation between conservative and liberal religious factions, which is much more promising than a

contest between faith and skepticism. There is, perhaps, an intellectual price to pay — moderate and liberal religious support for evolution may require downplaying blind variation and selection, implicitly allowing common descent due to divine guidance. Nonetheless, defenders of evolution education in the United States, such as the National Center for Science Education, have been fully committed to a view of compatibility between supernatural religion and science, and have highlighted liberal religious support for evolution. Such an approach has its critics: biologist Jerry Coyne, for example, suggests that directly confronting monotheistic views that nurture suspicion of evolution would be better (Coyne 2012). However, there is very little concrete evidence about what approach could be more effective at a large scale.

Enlisting liberal religion to support science is also somewhat risky because both in the United States and Turkey, liberal religiosity has been eroding while conservative, even fundamentalist views have been retaining their strength. Moreover, defenders of evolution tend to fall into a pattern of telling populists what experts they should trust, now attempting to instruct the faithful on what proper religion is supposed to be. Such attempts to impose elite power can backfire. Indeed, in Turkey, where liberal interpretations of Islam have been comparatively weak and associated with a discredited official secularism, efforts by defenders of evolution to argue that true Islam has no problem with evolution have not worked (Edis 2016).

Defending science is further complicated by certain liberal and progressive tendencies in today's politics. After all, the culture wars of right-wing populism are classic identity politics, even if they emphasize the grievances of a relatively powerful constituency rather than an oppressed minority. In a fragmented population where groups contest over different ways of knowing, post-truth defenses of pseudoscientific notions become easier. Indeed, Muslim apologists have often deployed postmodern rhetoric while erecting defenses against science-based criticism (Aydın 2008). Liberal Turkish intellectuals have often allied with the moderate Islamists in power, ostensibly aiming to democratize Turkish politics and promote free markets.

In fact, we know very little that skeptics and scientists can do to reliably combat populist pseudoscience. In the United States, polling indicates that there has been a slight lessening of support for creationism (Swift 2017). Views on evolution closely track forms of religiosity, so the recent increase in the numbers of nonreligious Americans probably accounts for a slight drop in creationism. In Turkey, the recent golden age of creationism has coincided with the political victories of moderate Islamism. While the public controversy about creation and

evolution appears to respond to broader political and demographic changes, it is hard to say much more. Better science education and communication are, presumably, always useful in efforts to persuade the public. But the landscape of our pseudosciences is shaped by political power more than open debate, since populists challenge the conditions under which public debates take place. A revolt against expertise cannot be stopped by claiming expertise. It is likely that even our best efforts only set us up to take advantage of political openings over which we have little control.

§6. Fighting the Right?

Skeptics and scientists do not enjoy any significant political power. Still, we can try to understand right-wing populism better, in order to gain insight into a political tendency that nurtures pseudoscientific ideas and antiscientific attitudes. For this understanding, our first instinct will be to consult the experts: social scientists who have been studying today's right-wing movements.

Skeptical analyses of pseudoscience have most often drawn from perspectives derived from natural science, the philosophy of science, and psychology. Skeptics have not been as comfortable with thinking about social context. Much of the literature concerning right-wing populism appears driven by a perception that populism is a threat to liberal democratic and inclusive values; when we encounter jargon about right-wingers attacking a "racialized Other" (Vieten & Poynting 2016), we may suspect we have encountered the academic left, which many skeptics distrust as a legacy of the Science Wars. Nonetheless, right-wing populism attempts to undermine all kinds of expertise, including social science and the humanities, so it might be useful to set academic infighting aside.

At present, there does not appear to be a strong agreement about how to explain right-wing populism. Analyses of empirical data inspire disputes about "demand-side" versus "supply-side" explanations emphasizing different social and political actors (Mudde 2010), and while historical comparisons to fascist movements are suggestive, it is not always clear how what we have learned may apply to today's different circumstances. Perhaps there is a deeper logic to populism in terms of "the dialectic of neoliberal reason" (Lebow 2019) or some other framework, but the variety of plausible proposals in play is reminiscent of the way even artifacts in experimental data summon up a multitude of theoretical explanations from physicists. In other words, defenders of science cannot rely on any expert consensus yet.

Even without a deeper consensus, however, there are some broad explanatory themes that repeatedly appear in the literature. First, there is some agreement

that the neoliberal political and economic practices that have become dominant globally have set the stage for a populist reaction. Second, it is also clear that the availability of information and ease of communication in the internet era also plays a role.

Since the time of Reagan and Thatcher, neoliberalism — the constriction of public space and the injection of markets and competition into all aspects of life (Brown 2015) — has come to describe our circumstances. In contrast with the preceding, more social democratic era, the professional and managerial class has allied with owners and investors (Duménil and Lévy 2011), adopting a technocratic politics where expertise has been deployed to manage states and economies increasingly removed from democratic constraints. These developments have coincided with the growth and more recent explosion of right-wing populism expressing anger at self-dealing elites and the expertise that validates their social position. Since historically, democratic participation has advanced due to the demands of non-elite actors (Usmani 2018), in a time when inequality is exploding and modern forms of working-class solidarity such as unions are becoming insignificant, movements that challenge the status quo have become more attractive. Right-wing populism has an advantage in organization, support from factions already close to power, and an ability to invoke forms of solidarity such as religion and nationalism that are not available to more left-wing attempts at populism. It is well-established that insecurity correlates with conservative religiosity (Norris and Inglehart 2011). Similarly, it is plausible that the economic and cultural insecurity faced by populations under neoliberal regimes contributes to an authoritarian backlash against liberal social values (Norris and Inglehart 2019). In any case, we have conditions that are not conducive to trusting expertise or critically evaluating pseudoscientific claims.

Still, all this does not add up to much more than an observation that neoliberalism creates space for right-wing populism. It does not fully explain why frustration with technocrats and social liberalization gets channeled in the particular directions we see. Moreover, populist politicians regularly adopt neoliberal policies. For example, in Bolsonaro's Brazil, we see climate change denial, significant creationism together with a powerful Protestant evangelical movement (Silva and Prado 2010), glorification of military rule — and an intensified economic and political neoliberalism. The Islamists in power in Turkey have been notable for their close connections to the Turkish business community, opposition to workers' organizations, and orthodox neoliberalism (Balkan, Balkan, and Öncü 2013). The Religious Right in the United States has always been a hyper-capitalist movement (Kruse 2015). Right-wing populism reacts against the social liberalization promoted by the "progressive

neoliberalism" (Fraser 2019) that represents the left edge of what seems possible to today's professionals, but it is by no means a reaction against neoliberal policies as a whole.

The other common theme in explanations of populism is the effect of recent information technologies. As the cost of access to information becomes lower, experts become more easily scrutinized; often, they lose their role as gatekeepers. Anger at technocrats is more easily organized, and trust in institutions erode (Gurri 2018). The result is an opening for populism, which is further advanced by the new forms of propaganda available to political actors who want to radicalize and mobilize right-wing convictions (Benkler, Faris, and Roberts 2018). The internet has been an especially ideal incubator of conspiratorial thinking, so that many of the most prominent antiscientific ideas of our day, from anti-vaccination beliefs to climate change denial, come wrapped in a package claiming that mainstream expertise has been corrupted, that scientists have been compromised and can no longer be trusted to tell the truth.

Studies of right-wing populism, then, do not present us with a unified explanation with clean-cut primary causes to identify and address. Instead, we have complicated, locally varying stories about the forms revolts against expertise take, involving everything from common human psychological vulnerabilities to opportunistic actors taking advantage of new social media to mobilize populations made insecure by neoliberal regimes. In our current environment, defenders of science can do little but try to make the best explanations available and also hope to advance them locally and opportunistically.

§7. Incompetent Elites

Defending science usually means celebrating a particular sort of expertise, embodied in particular institutions. Skeptics are often tempted to uphold an idealized image of science, even when we acknowledge that probing and explaining the world is always fallible. To learn about the world, we need to institutionalize a scientific attitude (McIntyre 2019). But science comes to us through universities, research labs, grant administrations, and the government agencies and technology companies that are home to armies of professionals with credentials in technical fields. Revolts against expertise cast doubt on all such institutions. We then might be tempted to respond by defending all such forms of established expertise as manifestations of rationality. But that, in effect, would collapse skepticism about pseudoscience onto a specialized form of status-quo conservatism. We also need to ask whether the experts are doing their job properly. Populists are not wrong that many among today's elites prefer self-

serving policies, and that many in the professional class — particularly economists, lawyers, and management consultants — serve to justify the predatory behavior of ruling elites (Galbraith 2017). Trust in institutions has not eroded without reason. In that case, we should also wonder if our institutions that are supposed to produce knowledge need shaking up.

Consider neoliberalism, which plausibly leads to a post-truth environment where pseudoscience flourishes. If this is correct, then much of the problem can be blamed on experts. After all, neoliberalism has become the conventional wisdom for journalists, politicians, and corporate knowledge workers alike. It is the near-universal ideology of professionals — who make their living from expertise. And the most socially consequential expertise is that of economics, the queen of the social sciences. Modern politics, including traditionally conservative parties and social democrats alike, has come to center on the imperative of economic growth and the conviction that a neoliberal version of a free market is the expert-certified proper way to run a modern economy. Rationality, in our social contexts, is very often economic rationality; efficiency, business efficiency.

Academic institutions, where business and management-oriented programs are prominent, and where the best and the brightest graduates from the highest prestige universities aspire to become financial consultants, often follow the same pattern. The experts are, however, divided. There is plenty of criticism of neoliberalism that emanates from academia, mostly from underfunded humanities and social science departments rather than the business and professional schools. If anything, the term "neoliberalism" is in danger of losing its specificity, becoming a generic label for all that critics find obnoxious in postmodern varieties of capitalism.

Some critiques of neoliberalism are especially relevant for science. Organizing institutions to produce returns on investment for private actors, such as closely tying universities to corporate sectors, can have corrupting effects, especially on applied science (Mirowski 2011). Defenders of science are usually aware of how scientific work with environmental implications, such as climate science, can be subjected to disinformation campaigns funded by extractive industries (Oreskes and Conway 2010). There are also more subtle distortions of science that are due to institutional features of funding research. Climate science, in fact, has a record of underestimating the severity of climate change, partly in order not to jeopardize funding by appearing overly alarmist to conservatives (Brysse et al. 2013, Herrando-Pérez et al. 2019).

Other criticisms more directly address the economic aspects of neoliberalism; indeed, such criticism became more visible after the failure of mainstream

economics to respond to the 2008 financial crisis in nontrivial ways. The criticism had little effect; neoliberalism emerged unscathed from the financial crisis (Mirowski 2013). A pattern of excuse-making, of insensitivity to empirical challenges, is one of the characteristics of pseudoscientific institutions skeptics very often highlight. While not comparable to a classic pseudoscience such as creationism, economics exhibits enough candidates for institutional pathologies to make the scientific status of economics an interesting open question (Edis 2018).

Even with communities of expertise being divided over neoliberalism, skeptics have mostly been inclined toward status-quo conservatism in such debates. There are many motivations to defend science, but a particularly important one for skeptical movements has been a variety of humanism that highlights the achievements of science as prime examples of human progress when not shackled by premodern institutions such as traditional religion. Confronting supernatural and pseudoscientific beliefs has not been just a matter of advancing knowledge, but contributing to a much broader sense of progress. Accordingly, the boundaries between skepticism and humanism have always been nebulous. Paul Kurtz, who was instrumental in founding CSICOP in the 1970s and headed it for many years, thought the rising tide of irrationality was a threat to progress. Indeed, Kurtz was a humanist philosopher who also ran the Council for Secular Humanism. CSI, the present incarnation of CSICOP, is organizationally still under the umbrella of the Center for Inquiry, which includes the Council for Secular Humanism.

Progress and unbounded human capability are also central themes of some economic schools of thought, and technocratic neoliberalism. Today, with his popular book *Enlightenment Now*, psychologist Steven Pinker has become a prominent spokesperson for a neoliberal humanist version of progress (Pinker 2018a). He has been embraced as a leading figure by American skeptics, appearing on the cover of *The Skeptical Inquirer* and *The Humanist* to proselytize for the status quo (Pinker 2018b, Naff 2018).

The reception of Pinker's version of progress has been varied. *Enlightenment Now* has, notoriously, become the billionaire Bill Gates's favorite book, though philosopher John Gray describes it as an "embarrassingly feeble" exercise in scientism (Gray 2018). Much in the book, such as its demonstration of a trend toward less violence, seems convincing. But other trends, such as a global reduction in abject poverty due to neoliberal technocratic practices, are much less clear than Pinker's representation (Hickel 2018, Hickel 2019). Moreover, even if the trends Pinker points out were real, he does not adequately address

questions about whether such progress is sustainable in the long term. In fact, he is disturbingly sanguine about the existential threats that have been multiplying, including nuclear war, climate change, biodiversity collapse, and future prospects such as super-AI's. Most such threats are directly related to our technologies, and the fact that our civilization's mistakes now have repercussions at a planetary scale. Technological change and industrial processes linked to market economies driven by short term profit can be, in this context, much more dangerous than Pinker likes to admit.

American skeptics, then, worry about right-wing populism exacerbating existential threats, but are also vulnerable to apologetics for a political outlook that both inflames populism and generates existential threats. We appear to too easily accept arguments for submission to technocrats wrapped in celebratory rhetoric about progress and enlightenment. Perhaps this is hard to avoid in a time when the image of science is closely tied to technological applications, and when the most prominent public representative of science and technology is Silicon Valley with its plutocratic libertarian politics, technological utopianism, and facile "solutionist" approach to structural problems (Morozov 2013). Neither is it easy when wealthy elites exclusively address social problems in market-based ways that reinforce the status quo, invoking business expertise as an all-purpose tool (Giridharadas 2018). Nonetheless, defenders of science as a process and a body of knowledge have become stuck defending institutions that undermine the public perception of science as often as support it. Even the crisis in public universities (Newfield 2016, Wright and Shore 2017), while inspiring new ways of thinking about academic institutions (Barnett 2017), has more often led to efforts to salvage the status quo. We have not been able to imagine a positive role for science beyond present institutions.

Perhaps this demands too much from skeptics, who are more usually intermediaries between the public and the scientific experts. But then, other intermediaries are also not in a healthy state. Consider journalism. Journalists often share the reflexive opposition to populism characteristic of the professional class. But structural problems have made journalism less effective against pseudoscience and conspiracy theories. Trust in the press has eroded together with most institutions. Perhaps, given the abject performance of the most respectable American media in events such as the run-up to the Iraq War, the press does not deserve trust. In the internet age, it is hard to find a funding model to support serious investigative journalism; it is a rapidly declining enterprise. Selling soap and amplifying artificial controversies may attract funds, but it does not inspire trust. And yet, the American media continually frame debates as conservatives versus liberals with a reasonable centrist compromise as an ideal.

Especially in matters such as climate change, the performance of the press has, again, been abject. Even when deploring our post-truth times and the crisis in their profession, journalists usually cannot conceive anything but inadequate technocratic fixes, reflexively siding with a status quo that created the problem (Bomey 2018).

In the populist and conspiratorial imagination, the professional and managerial class are supposed to be a liberal elite, directing affairs from behind the scenes. The populists are correct that the professionals, the experts, are disproportionately responsible for our current state of affairs. We have been in charge. And yet, we do not seem to be the most competent of elites. From our non-response to global warming to our inability to think beyond the status quo, we have a large measure of responsibility for our post-truth predicament. And so far, our complaints about the death of truth have an air of evasion of responsibility rather than taking constructive action.

§8. In experts we trust?

In the 1950s and 60s, American experts would have been operating in a context of Keynesian economics. Some would have been working on nuclear weapons. And some would have been managing the Cold War. American foreign policy has long been a domain of experts isolated from democratic constraints, and the best and brightest used their expertise to make disastrous decisions. Physicists found plenty of employment in weapons research, but some became increasingly horrified at the existential threat posed by the prospect of nuclear warfare and the policy of mutually assured destruction. Sociologist C. Wright Mills, who described the "power elite" of his day (Mills 2000 [1956]), introduced the phrase "crackpot realism" to capture the outlook of elites who considered themselves practical, rational, and above party politics — and invariably ended up recommending bombing somewhere.

Debates over the political role of expertise, distrust of elites, and suspicion among intellectuals that some alleged experts are not up to their task are no more a novelty than worries about public irrationality. Looking back at the perception of a rising tide of irrationality in the 1970s that led to the formation of CSICOP, we can also identify a conservative impulse. When a substantial number of educated young Americans revolted against the experts behind the Vietnam War and Cold War liberalism, many also indulged in UFO cults and pyramid power fantasies. When newly organized skeptics offered declarations against astrology or criticized psychic claims in the media, they reasserted the authority of science as hard-won, accumulated knowledge that should not be lightly rebelled against.

At least in the case of science, skeptics implied, the experts were right and their institutions deserved respect.

Science is not intuitive; it takes significant resources to learn and practice science. Joining scientific debates is not possible without significant prior effort, usually demanding credentials. Therefore, science must unavoidably depend on expert consensus, even as it must also remain open to challenge. Completely escaping the confines of established knowledge too easily leads to conspiracy theories, religious enthusiasms, or lunatic schemes of some sort. Creationists or alternative medicine enthusiasts will inevitably present themselves as rebels fighting an Establishment that excludes their views, and excluding them after due consideration is exactly what a properly functioning scientific enterprise must do. To this extent, public defenses of science will always have an element of conservatism about institutions and expertise.

But such conservatism need not be the full story. It is no surprise that concerns about rising tides of irrationality will partly be motivated by institutional conservatism and elites worrying about status loss. But there are a multitude of motivations behind public criticisms of pseudoscience. For example, some of us teach science. We consider widespread acceptance of creationism or quantum healing claims in the public sphere to be at least as much of a nuisance as in the classroom. We want to have real science, with its powerful explanations and magnificent conceptual structures, available to everyone as much as possible. Some of us encounter pseudoscientific scams, and criticize such scams from the perspective of consumer protection. Some of us have democratic political ideals, and precisely because we believe in public deliberation, do not want knowledge to be confined to social elites.

Today's concerns about pseudoscience in a post-truth era are similar to the concerns voiced in the 1970s, though professional status anxiety is more visible, and denunciations of irrationality more prevalent in media and politics. Some varieties of anti-science activity, such as climate change denial, raise the stakes further. This means an opportunity for defenders of science to reach a wider audience and to play a more prominent role than swatting down minor irritations such as pyramid power. But it also introduces a danger of being swept up in a politics centered on a professional and managerial class shoring up an unsustainable state of affairs.

If existential threats such as climate change amplify the need to combat science denial, we should also recall that the "business as usual" practices familiar from climate models and projections are what produced the existential threats in the first place. Highly educated professionals oversaw our civilization's non-

response to climate change, ocean acidification, and impending biodiversity collapse. Status-quo politics still promises half-measures and attempts to patch up business as usual (Hickel and Kallis 2019), deploying a rhetoric of reason and realism against more adequate proposals. Experts with the best credentials have administered our absurd stockpiles of nuclear weapons. Physicists have still, long after the Cold War, found little reason to stop worrying. Complacent, expertise-affirming liberals are far more responsible for our predicament than newly emboldened reactionary populists, even if populists are only likely to make things worse. Much of the media hand-wringing about post-truth political actors is in the service of a status quo that still promises to drive civilization over a cliff, just more slowly.

Crackpot realism lives on. Defenders of science should be able to keep their distance, while still opposing the nonsense generated by right-wing populism.

REFERENCES

ASHMAN, Keith M., and Philip S. BARINGER, eds. 2001. *After the Science Wars.* London: Routledge.

AYDIN, Hasan. 2008. *Postmodern Çağda İslam ve Bilim.* İstanbul: Bilim ve Gelecek Kitaplığı.

BALKAN, Neşecan, Erol BALKAN, and Ahmet ÖNCÜ, eds. 2013. *Neoliberalizm, İslamcı Sermayenin Yükselişi ve AKP.* İstanbul: Yordam Kitap.

BARNETT, Ronald. 2017. *The Ecological University: A Feasible Utopia.* London: Routledge.

BENKLER, Yochai, Robert FARIS, and Hal ROBERTS. 2018. *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics.* New York: Oxford University Press.

BILIM VE Yaratılış. 2018. İkinci Uluslararası Bilimler Işığında Yaratılış Kongresi, 8-9 Kasım 2018, Atatürk Üniversitesi, http://bilimveyaratilis.org. Accessed 22 May 2019.

BLANCKE, Stefaan, Frank Van Breusegem, Geert De Jaeger, Johan Braeckman, Marc Van Montagu. 2015. "Fatal Attraction: The Intuitive Appeal of GMO Opposition." *Trends in Plant Science* 20 (7): 414–418.

BROWN, Wendy. 2015. *Undoing the Demos: Neoliberalism's Stealth Revolution.* New York: Zone Books.

BRYSSE, Keynyn, Naomi ORESKES, Jessica O'REILLY, Michael OPPENHEIMER. 2013. "Climate Change Prediction: Erring on the Side of Least Drama?" *Global Environmental Change* 23 (1): 327–337. DOI: 10.1016/j.gloenvcha.2012.10.008

BOMEY, Nathan. 2018. *After the Fact: The Erosion of Truth and the Inevitable Rise of Donald Trump.* Amherst, NY: Prometheus Books.

COYNE, Jerry A. 2012. "Science, Religion, and Society: The Problem of Evolution in America," *Evolution*, DOI: 10.1111/j.1558-5646.2012.01664.x

DUMÉNIL, Gérard, and Dominique Lévy, *The Crisis of Neoliberalism.* Cambridge, MA: Harvard Univrsity Press.

EDIS, Taner. 2007. *An Illusion of Harmony: Science and Religion in Islam.* Amherst, NY: Prometheus Books.

EDIS, Taner. 2016. *Islam Evolving: Radicalism, Reformation, and the Uneasy Relationship with the Secular West.* Amherst, NY: Prometheus Books.

EDIS, Taner. 2018. "From Creationism to Economics: How Far Should Analyses of Pseudoscience Extend?," *Mètode Science Studies Journal* 8: 141-147.

EDIS, Taner. 2019. "Cosmic Conspiracy Theories: How Theologies Evade Science," in J. Seckbach and R. Gordon, eds., *Theology and Science: From Genesis to Astrobiology*. New Jersey: World Scientific.

EDIS, Taner. 2020. "The Politics of Islamic Opposition to Evolution in Turkey," in C. Mackenzie Brown, ed., *Asian Religious Responses to Darwinism: Evolutionary Theories in Middle Eastern, South Asian, and East Asian Cultural Contexts*. New York: Springer.

EDIS, Taner, and Maarten BOUDRY. 2019. "Truth and Consequences: When Is It Rational to Accept Falsehoods?" *Journal of Cognition and Culture* 19 153-175 (2019). DOI: 10.1163/15685373-12340052.

EDIS, Taner, and Saouma BOUJAOUDE. 2014. "Rejecting Materialism: Responses to Modern Science in the Muslim Middle East," in Michael R. Matthews, ed., *International Handbook of Research in History, Philosophy and Science Teaching Volume III*. Dordrecht: Springer.

EROLER, Elif Gençkal. 2019. "*Dindar Nesil Yetiştirmek": Türkiye'nin Eğitim Politikalarında Ulus ve Vatandaş İnşası (2002-2016)*. İstanbul: İletişim Yayıncılık.

FRASER, Steve. 2016. *The Age of Acquiescence: The Life and Death of American Resistance to Organized Wealth and Power*. New York: Basic Books.

FRASER, Nancy. 2019. *The Old is Dying and the New Cannot Be Born: From Progressive Neoliberalism to Trump and Beyond*. New York: Verso.

FRAZIER, Kendrick. 1996. "History of CSICOP," in Gordon Stein, ed., *The Encyclopedia of the Paranormal*. Amherst, NY: Prometheus Books, pp. 168-180.

FULLER, Steve. 2008. *Dissent Over Descent: Intelligent Design's Challenge to Darwinism*. London: Icon Books.

GALBRAITH, James K. 2017. "The Predator State," Catalyst 1 (3), https://catalyst-journal.com/vol1/no3/the-predator-state. Accessed 23 May 2019.

GERACI, Robert M. 2018. *Temples of Modernity: Nationalism, Hinduism, and Transhumanism in South Indian Science*. Lanham: Lexington Books.

GIRIDHARADAS, Anand. 2018. *Winners take All: The Elite Charade of Changing the World*. New York: Alfred A. Knopf.

GRAY, John. 2018. "Unenlightened Thinking: Steven Pinker's Embarrassing New Book is a Feeble Sermon for Rattled Liberals." *New Satesman*, 22 February 2018, https://www.newstatesman.com/culture/books/2018/02/unenlightened-thinking-steven-pinker-s-embarrassing-new-book-feeble-sermon. Accessed 20 May 2019.

GURRI, Martin. 2018. *The Revolt of the Public: And the Crisis of Authority in the New Millennium*. Stripe Press.

HABERMAS, Jürgen. 2008. *Between Naturalism And Religion: Philosophical Essays*, translated by Ciaran Cronin. Malden, MA: Polity Press.

HAMEED, Salman. 2008. "Bracing for Islamic Creationism," *Science* 322: 1637-38.

HERRANDO-PÉREZ, Salvador, Corey J A Bradshaw, Stephan Lewandowsky, David R Vieites. 2019. "Statistical Language Backs Conservatism in Climate-Change Assessments." *BioScience*, 69 (3): 209–219. DOI: 10.1093/biosci/biz004

HICKEL, Jason. 2018. *The Divide: A Brief Guide to Global Inequality and its Solutions*. New York: W. W. Norton.

HICKEL, Jason. 2019. "A Letter To Steven Pinker (And Bill Gates, For That Matter) About Global Poverty." https://www.jasonhickel.org/blog/2019/2/3/pinker-and-global-poverty. Accessed 20 May 2019.

HICKEL, Jason, and Giogos Kallis. 2019. "Is Green Growth Possible?" *New Political Economy*. DOI: 10.1080/13563467.2019.1598964

HIGGITT, Rebekah. "Is there a rising tide of irrationality?" *The Guardian*, 21 November 2012. https://www.theguardian.com/science/the-h-word/2012/nov/21/history-science. Accessed 22 May 2019.

JOHNSON, Alex. 2016. " 'Post-Truth' Is Oxford Dictionaries' Word of the Year for 2016," NBC News, 16 November 2016, https://www.nbcnews.com/news/us-news/post-truth-oxford-dictionaries-word-year-2016-n685081. Accessed 22 May 2019.

KAHAN, Dan M. 2017. "The expressive rationality of inaccurate perceptions," *Behavioral and Brain Sciences*, 40, E6. DOI: 10.1017/S0140525x15002332.

KAKUTANI, Michiko. 2018. *The Death of Truth: Notes on Falsehood in the Age of Trump*. New York: Tim Duggan Books.

KRUSE, Kevin M. 2015. *One Nation Under God: How Corporate America Invented Christian America*. New York: Basic Books.

LEBOW, David. 2019. "Trumpism and the Dialectic of Neoliberal Reason," *Perspectives on Politics* 17 (2): 380-398. DOI: 10.1017/S1537592719000434

MCINTYRE, Lee. 2019. *The Scientific Attitude: Defending Science from Denial, Fraud, and Pseudoscience*. Cambridge, MA: The MIT Press.

MILLS, C. Wright. 2000. *The Power Elite*. New York: Oxford University Press.

MIROWSKI, Philip. 2011. *Science-Mart: Privatizing American Science*. Cambridge, MA: Harvard University Press.

MIROWSKI, Philip. 2013. *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Fnancial Meltdown*. Brooklyn: Verso.

MOROZOV, Evgeny. 2013. T*o Save Everything, Click Here: The Folly of Technological Solutionism*. New York: Public Affairs.

MORRIS, Henry M. 2000. *The Long War Against God: The History and Impact of the Creation/Evolution Conflict*. Green Forest, AR: Master Books.

MUDDE, Cas. 2010. "The Populist Radical Right: A Pathological Normalcy," *West European Politics*, 33(6): 1167-1186. DOI: 10.1080/01402382.2010.508901

NAFF, Clay Farris. 2018. "Enlightenment *Wow*: The Humanist Interview with Steven Pinker," *The Humanist* March/April 2018. https://thehumanist.com/magazine/march-april-2018/features/enlightenment-wow-humanist-interview-steven-pinker. Accessed 22 May 2019.

NANDA, Meera. 2003. *Prophets Facing Backward: Postmodern Critiques of Science and Hindu Nationalism in India*. Piscataway, NJ: Rutgers University Press.

NEWFIELD, Christopher. 2016. *The Great Mistake: How We Wrecked Public Universities and How We Can Fix Them*. Baltimore: The Johns Hopkins University Press.

NISBET, Matt. 2006. "Cultural Indicators Of The Paranormal," *The Skeptical Inquirer,* https://skepticalinquirer.org/exclusive/cultural_indicators_of_the_paranormal/. Accessed 22 May 2019.

NORRIS, Pippa, and Ronald Inglehart. 2011. *Sacred and Secular: Religion and Politics Worldwide*. New York: Cambridge University Press.

NORRIS, Pippa, and Ronald Inglehart. 2019. *Cultural Backlash: Trump, Brexit, and Authoritarian Populism*. New York: Cambridge University Press.

ORESKES, Naomi, and Erik M. Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues From Tobacco Smoke to Global Warming*. New York: Bloomsbury Press.

PIGLIUCCI, Massimo, and Maarten Boudry, eds. 2013. *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem*. Chicago: The University of Chicago Press.

PINKER, Steven. 2018a. *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress*. New York: Penguin Books.

PINKER, Steven. 2018b. "Progressophobia: Why Things are Better Than You Think They Are," *The Skeptical Inquirer* 42 (3).

POWELL, Scott S. 2019. "The Deep State Digs Deeper," Discovery Institute, https://www.discovery.org/a/21435/. Accessed 22 May 2019.

SEHAT, David. 2011. *The Myth of American Religious Freedom.* New York: Oxford University Press.

SILVA, Heslley Machado, and Isabelle Gonçalves de OliveiraPrado. 2010. "Creationism and Intelligent Design: Presence in the Brazilian Educational Policy," *Procedia - Social and Behavioral Sciences* 2 (2): 5260-5264. DOI: 10.1016/j.sbspro.2010.03.856

SOLBERG, Anne Ross. (2013) *The Mahdi Wears Armani: An Analysis of the Harun Yahya Enterprise.* Huddinge: Södertörns Högskola.

SWIFT, Art. 2017. " In U.S., Belief in Creationist View of Humans at New Low," *Gallup,* https://news.gallup.com/poll/210956/belief-creationist-view-humans-new-low.aspx. Accessed 22 May 2019.

THOMPSON, Michael J., and Gregory R. Smulewicz-Zucker, eds. 2018. *Anti-Science and the Assault on Democracy: Defending Reason in a Free Society.* Amherst, NY: Prometheus Books.

TRAVERSO, Enzo. 2019. *The New Faces of Fascism: Populism and the Far Right.* Brooklyn, NY: Verso Books.

TÜFEKÇI, Zeynep. 2017. *Twitter and Tear Gas: The Power and Fragility of Networked Protest.* New Haven: Yale University Press.

USMANI, Adaner. 2018. "Democracy and the Class Struggle," *American Journal of Sociology* 124 (3): 664-704.

VIETEN, Ulrike M., and Scott POYNTING. 2016. "Contemporary Far-Right Racist Populism in Europe," *Journal of Intercultural Studies* 37 (6): 533-540. DOI: 10.1080/07256868.2016.1235099

WRIGHT, Susan, and Cris SHORE. 2017. *Death of the Public University?: Uncertain Futures for Higher Education in the Knowledge Economy.* New York: Berghahn.

YILDIZ, Ahmet, Nurcan KORKMAZ, Necla DOĞAN, eds. 2019. *Tarihten Güncele Laik Eğitim: Kavramlar, Deneyimler, Sorunlar.* İstanbul: Kalkedon Yayıncılık.

NOTES ON CONTRIBUTOR

TANER EDIS is professor of physics at Truman State University, United States. He has long been interested in the philosophy of science, especially concerning differences between healthy scientific enterprises and institutions that promote popular pseudoscientific and supernatural beliefs.

CONTACT INFORMATION
Department of Physics, Truman State University. Kirksville, MO, 63501 - USA. e–mail (✉): edis@truman.edu · iD: http://orcid.org/0000-0002-8195-7343

HOW TO CITE THIS ARTICLE
Edis, Taner (2020). «A Revolt Against Expertise: Pseudoscience, Right-Wing Populism, and Post-Truth Politicst». *Disputatio. Philosophical Research Bulletin* 9, no. 13: pp. 00–00.