The Discontents of Truth & Trust in 21st Century America

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Credible fact-making for policy demands the same legitimating moves as are required for credible politics. Experts, like politicians, must represent the world in ways that respect diverse standpoints, aggregate disparate opinions to produce a semblance of objectivity, and find persuasive ways to bridge gaps between available and ideal states of knowledge. Every society, moreover, commands its own culturally recognized approaches to producing and testing public knowledge, and expert practices must conform to these to be broadly accepted. Insisting on the superior authority of science without attending to the politics of reason and persuasion will not restore trust in either knowledge or power. Instead, trust can be regained with more inclusive processes for framing policy questions, greater attentiveness to dissenting voices and minority views, and more humility in admitting where science falls short and policy decisions must rest on prudence and concern for the vulnerable.

The present has a way of engulfing all other time. For most of us, today's problems feel bigger, sharper, and more in need of correction than earlier ones. This overvaluing of the near past is so pervasive that cognitive psychologists have a name for our tendency to rely on recent memory in deciding for the future: the "availability heuristic."[1] Loss of trust in expertise is one such problem that has acquired unique urgency in the wake of the COVID-19 pandemic. Judged by the proliferation of media reports, books, articles, and research projects on the topic, trust suddenly emerged as a salient problem for the Western world in the early 2020s. But though it appeared to some as a new social malaise, it was anything but that.[2] Looking behind the attention-grabbing headlines, it is clear that this crisis of legitimacy took root long before the SARS-CoV-2 outbreak of 2019. It had germinated for decades in a miasma of rising skepticism toward expert recommendations: in regulatory agencies, in courts, in advisory committees, in large corporations, and in international organizations. Seen in hindsight, the election of Donald J. Trump to the U.S. presidency in 2016 was not so much a cause as a symptom of the growing discontent with expert authority. If "democracy dies in darkness,"[3] then trust would seem to have died in the glare of transparency, its end hastened by the advent of the internet and social media. How can we begin to re-

pair the frayed nexus of truth and trust in the light of this long and complex history and in today's ruthlessly unforgiving information environment? And how does the theorizing of knowledge-power relations in modernity help us in this project?

In 1770, shortly before the American Revolution, Edmund Burke wrote an essay on the loss of trust between the sovereign and the populace in words that still resonate strongly. His litany of "present discontents" reads like an eerie forecast of our own time: a government "at once dreaded and contemned," rank, office, and title having "lost their reverence," inaction a "subject of ridicule," and hardly anything that "is sound and entire" but that "disconnection and confusion" prevail abroad and at home.[4] When trust collapses, Burke observed, very little can be done to summon people back to the same table, real or figurative: "When men imagine that their food is only a cover for poison, and when they neither love nor trust the hand that serves it, it is not the name of the roast beef of Old England that will persuade them to sit down to the table that is spread for them." His tract was widely interpreted as a call for a better organized form of politics. Burke asked his readers to rise above factionalism and embrace the formation of political parties within which people would subordinate individual self-interest to a shared commitment to the good of the nation. "Party," he wrote, "is a body of men united for promoting by their joint endeavours the national interest, upon some particular principle in which they are all agreed." Only by principled and virtuous association would people acquire the strength and stamina to achieve higher political goals. Trust, in short, was a matter of getting the politics of association right, to better align what people should aspire to achieve in public life with what could be practically accomplished.

The task of restoring legitimacy to experts and governing institutions looks equally desperate in twenty-first-century America, where the COVID-19 pandemic has raised the stakes yet higher for both experts and governments.[5] In fights over mask and vaccine mandates, disaffected citizens furiously questioned, and often flouted, public health requirements that government officials justified on claims of sound science. In April 2022, a federal judge in Florida unilaterally overturned the government's mandate to wear masks in airports and on public transportation, to the consternation of public health authorities.[6] The causal relationship between these acts of opposition and rising COVID case counts and deaths became another topic of contestation. Activists and resisters upended normal rules of civility in shops and restaurants, school board meetings, legislative assemblies, and airplanes in full flight. With trust in authority at historic lows, America confronted a moment of disrepair and reckoning similar to Burke's, and hence also a moment for rethinking what it might take to reconnect people to their ruling institutions so that policy-makers' claims, reasoning, and compulsions might again be seen as legitimate. Unlike in Burke's day, parties are not the answer: the two leading parties are embroiled in hostile moves likened to tribal warfare. From each po-

sition, the other's facts and reasons are tagged as suspect and dangerous. On the most urgent social issues of the present – from fair elections and racial justice to climate change and public health – there seems to be no shared base of trusted expertise or common knowledge on which the government might build policy compromise, let alone consensus. Authoritarianism looms as the feared backlash.[7]

When such radical "disconnection and confusion" prevail, there is no choice for democracy but to go back to basics. Possibly the most foundational of modernity's assumptions is that there are universally valid facts, many revealed by science, on which everyone must agree, and these provide the necessary grounding for values to negotiate from. Hannah Arendt, writing in 1967 on the tensions between truth and politics, accepted that politics encompasses the art of persuasive lying, but she insisted that factual truth puts a backstop on what politics can change at will, even when politicians think they can get away with mass deception.[8] When distrust is endemic as now, however, facticity itself must be put under the lens. Where and how is public knowledge produced and what is the appropriate role for science in informing politics? Can science legitimate policies of high economic, social, and political consequence while remaining, in terms constantly invoked by the Intergovernmental Panel on Climate Change (IPCC), "policy-relevant but not policy-prescriptive"?[9] How can any expert body accomplish that delicate balancing of relevance and non-prescription without losing the public's confidence?

Several decades of scholarship in science and technology studies (STS) offer an indispensable starting point for addressing these questions, and they starkly underline the futility of trying to maintain sharp boundaries between the work of science and the work of politics. STS research has transformed our understanding of the nature of facts, knowledge, and expertise by examining in depth how scientists build new knowledge domains, innovate methods, deal with uncertainty, and come to agree on phenomena that are eventually treated as facts. Science, seen through the STS lens, is never a pure encounter between the powerful, discerning mind of the truth-telling natural philosopher and an unchangeable, preordained, external nature. Rather, it is always a collectively constructed representation of reality, a product of group effort, undertaken by communities of shared knowledge and belief, embedded within institutions and cultures that have their own social, political, and economic dynamics.[10] That multilayered social framework shapes how scientists look at the world, what they choose to investigate, and how they interpret what they have seen within their own select communities.

Translating the results of science's painstaking discovery process into political or policy domains, subject to their own rules of the game, exposes scientific consensus to alien forms of skepticism and added demands for legitimation.[11] Outsiders to science's normal processes of consensus-building may reject the insider agreements on varied grounds, such as perceived corruption, opposing religious

and cultural beliefs, or experiential knowledge that runs counter to what scientists take for granted. The factors that contribute to disconnects between experts and lay citizens need to be disentangled if trusting relations are to be rebuilt. Expert-lay relationships, moreover, are mediated by institutions that themselves must strike an uneasy balance between scientific claims and political expediency. In the public domain, expert knowledge is called upon to perform three tasks that cannot be contained within the practices that philosopher of science Thomas Kuhn famously described as "normal science"[12]: *representation* of phenomena deemed relevant for policy (what is the nature of the problem we are seeing?); *aggregation* of knowledge from diverse sources and viewpoints (how do we reconcile different interpretations of what we see?); and *bridging* to fill gaps between what is known and what is needed for problem-solving (how do we extrapolate from available data, or decide when we know enough?). Through techniques of *representation*, science often shows us new things to care about (such as the ozone hole, climate change, fetal abnormality, rising income inequality). Through *aggregation* of disparate viewpoints, science seeks to tell a coherent – and, for policy purposes, actionable – story about complex, contested phenomena (such as a maximum mean temperature rise to maintain a stable climate or an interest rate hike to stop inflation). And through *bridging* mechanisms such as statistical analysis, models, and algorithms, science enables predictions from imperfect knowledge (like which prisoner is likely to revert to criminal behavior upon release, how much food will be needed to feed a growing world population, how far must greenhouse gas emissions be cut to prevent a climate catastrophe, or how likely is it that an asymptomatic, COVID-positive individual will infect a contact group?).

Importantly, just as the political tasks of representation, aggregation, and compromise are accountable to preexisting norms and rules, so too are the basic practices of public knowledge-making accountable to local cultures of sense-making, or "civic epistemologies."[13] The three sets of practices that are essential for making public facts – representation, aggregation, and bridging – are neither universal nor grounded in an invariant "scientific method." Normally backgrounded in the theater of politics, these culturally authorized procedures for producing public knowledge must be understood and respected in efforts to rebuild trust in the wake of crises such as the pandemic. Civic epistemologies are part of the machinery whereby contemporary polities integrate knowledge with values, and they constrain the range of approaches to getting publics to accept and agree on facts. In the United States, for example, such background norms include a preference for experts qualified by certified disciplinary credentials and for open, adversarial contests among stakeholders, even if such contestation makes closure difficult. Closed-door negotiations among experts representing diverse economic and political positions have found less favor in the American context than in many European countries, though those approaches are more likely to lead to consensus on factual claims.[14]

Burke's solution to his era's political discontents famously was a defense of more energetic collective action. He proclaimed that "no men could act with effect who did not act in concert; that no men could act in concert who did not act with confidence; that no men could act with confidence who were not bound together by common opinions, common affections, and common interests." Parties, for Burke, would represent the collective, aggregate their core values, and bridge differences among members even if individuals disagreed on some of their less central values.

In modern times, science has stepped in to provide an added foundation of commonality that many see as essential for societies to act in concert and with effect. To the list of opinions, affections, and interests, all of which can be factionalized, science has added the superior force of common knowledge, which, by definition, sits above mere interests. Good scientific knowledge is viewed throughout the world as indispensable to the running of modern societies. It gives politicians and policy-makers authority to identify, frame, and prioritize problems, assess the likelihood of possible outcomes, evaluate their consequences, and design workable responses. But although democracy theorists from Arendt to contemporary political epistemologists such as Hélène Landemore agree on a polity's need for shared truths to serve these purposes, where to look for common factual understandings in pluralistic societies and how best to arrive at them are by no means settled.[15] Indeed, the risks of political fracture and fractiousness, even on questions of scientific fact, have grown more intense in our era of instant electronic communications and opinion-shaping digital technologies than in the older, slower days of newsprint, telephones, and television.[16]

Democracy theorists have tended to divide on what we may call the "knowledge question" and its implications for legitimacy and trust: Is shared knowledge indispensable for good democracy? If so, then how should one treat factual disagreement in communities of free-thinking and necessarily heterogeneous opinion holders? John Rawls, one of the most influential political theorists of the twentieth century, advocated a position of "epistemic abstinence," associated with the argument that insisting on any singular truth as a precondition for good politics would simply result in coercion of the less powerful by those with more power.[17] In a series of rebuttals, other political theorists have insisted that abstaining from truth claims is not only *not* a necessary condition for political consensus, but that a positive commitment to correct epistemic positions is essential for functioning democracies. Landemore, in particular, holds that for a democracy to be successful, it must subscribe to what she calls a "procedure-independent" standard of validity or correctness: in other words, democratic processes cannot insist on neutrality with respect to where the truth lies.[18] Getting the right answers, in accordance with standards that are not themselves embedded in politics, is part and parcel of good government, along with securing the fundamental values of equality, fairness, and justice.

It is one thing to subscribe to an ideal of independent standards of correctness, however, and quite another to work out where such standards can be found. STS research has repeatedly demonstrated that what we accept as fact for policy purposes is not a preexisting condition of the world, discoverable through policy-neutral processes, but rather the endpoint of socially sanctioned methods of observation, argument, negotiation, and persuasion.[19] The production of credible facts thus depends on prior agreement about the right ways to go about finding facts. Without such settled agreements, controversies about the validity of salient claims and findings are prone to persist or continually resurface. Moreover, in the age of social media, the lines between claim, finding, fact, information, knowledge, and evidence are easily blurred. Scientists themselves have contributed to confusion by abandoning the slow and costly processes of peer review and fact-checking to disseminate attention-grabbing claims – what political scientist Yaron Ezrahi evocatively called "out-formations" – rapidly into the consumer marketplace in place of better validated information.[20] Such behavior is all the more common in times of crisis, when reputation, intellectual property rights, and financial support may hinge on claiming priority for one's own work above that of competitors and rivals.

In keeping with traditional political theory, however, conventional explanations for the loss of trust in institutions providing critically needed, policy-relevant knowledge tend to fall back on blaming the recipients and not the generators of knowledge. The realist conception of science dominates the public discourse, most especially in the United States, reinforcing the notion that facts have validity independent of human process, will, or intention. Possibly the most common move is to pin the cause of distrust on the public's misunderstanding of science, which itself is explained in varied ways.[21] On one common view, it is simply a matter of ignorance. There is a built-in asymmetry between experts, who arrive at the truth by virtue of their specialist knowledge, skills, and experience, and non-expert publics who are too ill-informed, technically deficient, or interest- and instinct-driven to accept the expert pronouncements as true. The legitimacy of expert consensus is not put in question. It is the deniers who are seen to have turned away from expert judgment because they are "antiscience" or have bought into the radically relativist "post-truth" position that there is no truth apart from politics: it is power all the way down.[22] In the United States, the divisive years of the Trump presidency added weight to this diagnosis through repeated attacks on science advice from the highest places in politics – so much so that many left-leaning scientists and commentators greeted President Joseph Biden's narrow win in 2020 as a victory for science in a country widely seen as almost evenly split between pro- and antiscience factions.[23]

A second, partly related view is to blame popular misunderstanding on conscious corrupters of the truth who appropriate and subvert the processes of sci-

ence in order to manufacture doubt where none should exist, sow confusion where clarity should prevail, and sap people's will to act by diluting the power of the expert consensus. Here again the public is cast in a passive and unknowing role in accordance with what STS scholars call the "deficit model." Culprits in these corruption stories include powerful private groups, most prominently the fossil fuel, chemical, and tobacco industries, and scientists who sell their services to such lobbies for money and fame.[24] From the standpoint of the media, the pandemic spawned a new rogues' gallery of scientists who touted quack remedies or cures lacking adequate scientific validation, such as the drugs ivermectin and hydroxychloroquine. But the line between rogue and responsible was never so easy to draw. Prominent among the dissidents endorsing hydroxychloroquine, for example, was France's Didier Raoult, a charismatic, politically well-connected, and highly credentialed member of France's COVID-19 committee from Marseille. Raoult's work had long been regarded with suspicion by colleagues in the French scientific establishment, for whom he was an outlier.[25] In a time of great public anxiety and demand for quick solutions, however, a figure like Raoult, who offered certainty and was not manifestly unqualified, carried heightened authority. He won powerful support in France and elsewhere, although critics turned on him for deluding people who seemingly did not have the knowledge or capacity to disentangle good science from bad.

While the deficit model rightly points to gaps in expertise between specialists and publics, and hence is reassuring to mainstream science, it leaves unanswered highly pertinent questions about the politics of trust. Why, though indicators demonstrate consistently high public confidence in science and medicine, do some claims dismissed by mainstream science nonetheless gain ground in public opinion? What accounts for particular focal points of distrust, and why do obvious (even ridiculous) falsehoods find readier, more fertile ground in some societies than others? The STS framework of co-production helps make sense of these puzzles. This theoretical posture derives from demonstrated intimate connections between how we see the world (epistemic truth) and how we value the world and wish to live in it (normative truth or justice).[26] Whereas much of administrative and legal practice is geared toward separating the former from the latter, the framework of co-production posits that *in practice* the building of natural ontologies and representations, usually seen as the preserve of science, proceeds hand in hand with the work of developing discourses, identities, and institutions in any society. Indeed, an expert institution has authority as such – that is, it enjoys institutionalized credibility – precisely because it can authorize both knowledge and norms in order to persuade its audiences what are the right beliefs and why those beliefs are the ones to live by. It is not that expert institutions find and purvey truths from some "outside" that exists independent of society; it is that institutions such as courts and expert regulatory agencies are accepted as le-

gitimate largely because of their capacity to diagnose what matters to people and deliver credible knowledge on those issues.[27]

Co-production is a pervasive feature of modernity simply because the lives we live could not be led without the infrastructure of reliable expert knowledge. Finding examples of co-production is therefore more a matter of how one chooses to look at the role of knowledge in decision-making than what specific problems one chooses to look at. Almost any technical certainty we live by can be revisited and re-narrated in the idiom of co-production. It is, however, easiest to demonstrate this process at work when significantly new ways of knowing the world gain a hold on public consciousness and move societies to collective action. These might include the germ theory of disease, the discovery of the ozone hole, the attribution of some cancers to chemicals, the reality of anthropogenic climate change, or the identification of inequality as a social problem.[28] In each of these instances, as in countless less transformative or consequential moments of altered understanding, the change in public awareness followed no simple, linear path from scientific discovery to concerted action. Rather, what historians, political scientists, sociologists, and STS scholars, among others, have repeatedly documented is an intertwined, often long-drawn evolution of new instruments and ways of seeing (such as microscopes, atmospheric chemistry, toxicology tests, climate models, statistics); professionals with acknowledged skills and training (such as doctors, earth scientists, modelers, economists); groups willing to be seen as affected (such as asymptomatic disease carriers, bearers of genetic risk, economically disadvantaged groups); and institutions capable of making and certifying knowledge claims even under conditions of uncertainty (such as university departments, professional societies, expert committees, and regulatory agencies).

What emerges forcefully from these convergent lines of research on knowledge production is that – especially in contested political domains – the legitimacy of scientific facts and representations cannot be disentangled from the ways in which powerful actors account for their claims of expertise to varied audiences. In this sense, public knowledge and public authority are interdependent and co-produced. Put differently, standards of epistemic correctness do not stand outside of politics but are configured through the same processes of social authorization as political legitimacy. It follows that any attempt to build trust solely on the basis of the claimed robustness of science, without addressing the associated politics, is likely to founder under stress.

The framework of co-production has rendered obsolete the model of science policy captured in the well-known phrase "speaking truth to power." That description of the idealized relationship between science and politics firmly located truth-making on one side of a normative wall and political action on the other. Neither side, this formulation implies, should be allowed to in-

terfere with or contaminate the other: scientists and technical experts should find and speak the truth, wherever it may lead; and power should enact society's purposes, with deference to the truths spoken by science, but not constrained to act in specific ways based solely on what the science says. It is a foundational finding of STS that such a bright line between truth and power does not exist in practice – not until it has been put in place as a result of negotiation or the exercise of power.[29] Politics and power, with small *p*'s, enter into the practices of public knowledge-making in innumerable ways, from close-in choices of instrumentation, methods, and disciplinary criteria of soundness by scientists to larger public determinations about the sources and objectives of research funding, the framing of questions that need to be answered, and decisions about when to declare that knowledge is sufficiently robust for application. The uses may range widely, from administering a vaccine to launching a rocket to offering an algorithmic substitute for counting a population, and much else besides. In each instance, the deployment of knowledge or technology is a social choice, shot through with collective values and preferences.

For practical purposes, of course, as members of modern societies, we mostly accept expert claims and technological artifacts unquestioningly and at face value in our daily lives – for example, airplane timetables, food labels, drug doses, or standardized test results – simply as the price of leading our lives without constant uncertainty. But it remains the case that each of the countless points of epistemic stability, or stubbornness, that we rely on daily comes with its own history of struggle and compromise. And when any one of them becomes controversial, such as through allegations of racial bias in the case of standardized tests, that prehistory can be excavated and reopened for contestation.

This state of affairs, in which a largely invisible world of expert knowledge and skills undergirds the safety, security, and quality of our lives, has led to what we might see as a tacit constitutional settlement: no representation (of conditions in the world) without representation (of the voices of those affected). Indeed, one great movement of democracy through the long twentieth century has been toward publics in all societies demanding more transparency, accountability, and say in the ways that experts determine, and rulers deploy, facts of relevance to all our lives. These moves take many different, culturally grounded forms. Some countries have turned to the law through measures such as the 1946 U.S. Administrative Procedure Act guaranteeing hearings before regulatory action, France's Charter for the Environment cementing citizens' right to participate in decision-making, and the South African Supreme Court's decision upholding the public's constitutional right to participate in law-making on issues of life.[30] In other contexts, citizens have taken to the streets in droves to signal dissatisfaction with official policies on technological issues, such as Germany's massive nuclear protests in the 1970s or the 2008 beef protests in South Korea challenging the

government's decision to import U.S. beef despite public concerns over mad cow disease. What all these moves have in common is a deepening unease with rule by experts and a worry that government reliance on technical expertise often masks the promotion of particular sectarian, class, or economic interests at the expense of the broader public good. The breakdown of trust in experts thus can be traced to a deeper sense of being excluded from the processes by which powerful expert knowledge is made.

Demands for representation raise a corollary problem that Rawls and other political philosophers have wrestled with: what to do about the dilemma of epistemic pluralism, or the fact that in modern societies, people may see things differently based on their particular interests and standpoints. Since the Progressive Era, a pragmatic answer has been to look to expert institutions to aggregate epistemic differences and develop consensus on complex policy problems requiring diverse technical inputs.[31] The IPCC is one such body with enormous clout at the international level, a cowinner with former U.S. Vice President Al Gore of the 2007 Nobel Peace Prize for alerting the world to the perils of climate change. The COVID-19 pandemic thrust any number of other national and global expert bodies into the limelight, from the Centers for Disease Control and Prevention (CDC) in the United States to the World Health Organization (WHO). One might have expected bodies such as these to consolidate trust during the pandemic, but despite their long-established claims to expert authority, neither the CDC nor the WHO proved equal to the task. Under pressure to justify extensive and unpalatable restrictions on personal liberty in the name of public health, neither organization found its expert reputation to be a sufficient shield. Both fell victim to charges that they were captive to special interests whose political impulses had colored the parent body's reading of the evidence.

Faced with such challenges, expert groups often adopt the discourse of factual truth almost as a conditioned reflex. They claim to be "following the science," as if their own practices of representation, aggregation, and bridging had nothing to do with the knowledge they relied upon. The discourse of truth seeks to abandon the messy battleground of epistemic pluralism by escaping to a position above the fray, seemingly untouched and untouchable by political winds. In complex modern societies, some epistemic moves that serve this purpose have come to be accepted as necessary if an expert body's judgment is to be trusted. Chief among these is the claim of objectivity, the posture that allows knowledge-makers to speak as if from a viewpoint untainted by cognitive bias, subjectivity, or special interest.

Objectivity, however, is not procedure-independent in the sense desired by political theory. It is not an invariant standard but a historically and culturally grounded achievement.[32] Objectivity is constructed in accordance with locally specific criteria of virtue and validity that experts must respect if they are to as-

sert their credibility and legitimacy. Three standpoints are widely seen as guarantors of objectivity, although each is achieved through its particular epistemic practices and forms of accountability: the view from *nowhere* (sanctioned by the methods of empirical science and quantitative analysis); the view from *everywhere* (sanctioned by inclusive representation and fair deliberation); and the view from *somewhere* (sanctioned by individual witnessing and moral authenticity).[33] These standpoints are often brought together within decision-making institutions because each has its frailties and thus, on its own, is vulnerable to challenge and critique. Performed together, they are thought to ensure a kind of overlapping consensus that offers a closer approximation to truth and reality.

A formal courtroom proceeding, for instance, unites the view from somewhere and the view from nowhere. Opposing parties make their case, unabashedly representing their interpretation of the evidence with all the persuasive tools at their disposal. Markers of authenticity, such as expressions of sincerity or remorse, carry weight in such representations, which is why defense lawyers generally try to put their clients on the stand. While legal ethics forbids outright lying by lawyers and witnesses, the spin placed on the facts is allowed to be as partisan as good advocacy can make it, and there is no obligation to represent the situation from any viewpoint other than the litigants' own. It falls to the judge or jury to derive from the opposing arguments a conclusion that does not bear the positional stamp of the parties, but distills from clashing testimonies "from somewhere" a detached and impersonal verdict "from nowhere." The scientific process of peer review followed by editorial judgment offers a similarly hybrid approach: the editor's task is to synthesize from multiple reviews, each possibly reflecting the reviewer's personal biases, a composite recommendation that pushes a publication closer to impartial truth.

By contrast, fact-finding within a typical expert advisory committee aims to produce a synthetic view from everywhere that does not foreground personal opinion or special interests. Here, the presumption is that holism is the best approach to fact-making, and a committee comes closest to reality by combining all relevant perspectives into an inclusive whole. While the size and composition of expert bodies may vary, based on the scope and significance of the issues at stake, the notion that they should incorporate political as well as epistemic diversity is widely held. Committees entrusted with public fact-making often represent multiple disciplines, as well as a cross-section of stakeholder perspectives. Though each participant may bring a view from somewhere, colored by the specifics of that position, the presumption is that, by integrating knowledge from every significant standpoint, the collective body arrives at a representation that can be accepted as unbiased, and hence objective, by all. To strengthen the appearance of consensus, some bodies take pains to avoid dissenting opinions, though others see dissents as contributing to the committee's credibility.

Some approaches to aggregating diverse epistemic positions avoid mediating bodies such as courts or committees and seek instead to take the measure of public opinion directly through mechanisms such as deliberative polling or referenda. Associated particularly with the work of political scientist James S. Fishkin, deliberative polling attempts to combine the virtues of crowd-sourcing information and opinion formation through deliberation in small groups.[34] Any effort to model so large and amorphous a collective as a public can be critiqued for errors of sampling and faulty representation, and Fishkin's approach has drawn its share of such commentary. From an STS perspective, however, the more serious limitation is that instrumental elicitations of public opinion as inputs to policy may reinforce the biases that led to particular, possibly un- or antidemocratic formulations of public problems. For example, in a far-reaching study of deliberative mechanisms designed to set limits on embryo research, STS scholar J. Benjamin Hurlbut showed that most methods of aggregating citizens' views on the subject narrowed the scope of deliberation while technology itself was enlarging the goals and purposes of intervening in human reproduction.[35] Such mismatches between what is of concern to citizens and what actually gets discussed in formal deliberative proceedings can contribute to the gulf between experts and publics and to the undermining of trust.

In practice, collective knowledge-making in any society draws on long-accepted traditions of representation, aggregation, and bridging gaps between what is and what needs to be known. Expert processes do not freely adopt styles of how to argue and how to build agreement. They are regulated by law or embedded in political tradition. Modes of demonstrating objectivity are similarly conditioned by prior social commitments, including rules governing expert professions or derived from administrative law. For example, the view from nowhere has earned special purchase in American politics through entrenched and interlocking practices of public claims-testing that differ considerably from those in other nations with comparably active democracies and powerful scientific communities.[36] These cross-cultural differences play a substantial part in framing how the problem of trust manifests itself within a given society.

The intertwined production of public facts and public norms means that expert bodies cannot achieve buy-in unless their epistemic practices are accepted as valid by the societies in which they operate. These practices vary widely across political systems, even though in principle all such bodies are committed to the same standards of objectivity, "sound science," and "evidence-based" judgment. Just as cultures are defined by recognized and recurrent practices of meaning-making around fundamental social relations – such as kinship, marriage, worship, property rights, death and dying – so political cultures gravitate toward the institutionalized patterns of public fact-making, demonstration,

and reasoning that I have termed civic epistemologies. National political cultures differ, for instance, in the methods they use to construct objectivity in public decisions: through delegation to trusted individuals such as experienced civil servants, through consensus-building within multipartite representative bodies, or through adversarial processes designed to sift good from bad arguments and appeal to impartial knowledge. Institutions that conform to their culture's dominant civic epistemologies are able to maintain public trust because experts and lay publics agree on the right way to develop facts and arguments; by the same token, institutions sacrifice trust and credibility if they operate without awareness of, or against the grain of, their culture's preferred ways of knowing.

Sometime in April 2020, a new icon of trust emerged on the American scene: Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases and chief medical advisor to the president. Born on Christmas Eve in 1940, Fauci was an unlikely folk hero. Yet the slogan "In Fauci We Trust" sprouted on innumerable yard signs and pop culture merchandise like mugs and T-shirts. Dubbed the "nation's top infectious disease expert," Fauci conducted countless press interviews while also appearing frequently at President Trump's side in his daily briefings on the pandemic. Fauci's absences drew panicky comments, and his "two-second grimace and a face-palm"[37] on a day when the president joked about the "deep state department" turned him into an internet sensation. As one expert on popular culture observed, "he seems to be talking sense and science."[38] It is tempting to read the Fauci phenomenon as an example of America buying into the view from somewhere, specifically the position of personal credibility occupied by the honest and experienced Dr. Fauci. More plausibly, however, Fauci came to personify the caretaking ethos of the physician who has sworn an oath to put the patient's health foremost, in a moment when no one else in the federal administration seemed to offer coherence, competence, or caring. So seen, Fauci became the voice of transcendent epistemic authority because his mission was that of the nation's healer, an embodiment of the view from everywhere. Instructively, the CDC's efforts to restore trust through abstract appeals to science (the view from nowhere) in the first year of the Biden administration proved less persuasive than Fauci's pronouncements at the pandemic's height.

The peculiarity of the U.S. debate over the trustworthiness of pandemic science emerges most clearly by contrasting it with parallel developments in other Western democracies.[39] Strident objections to vaccine and mask mandates surfaced elsewhere too, for example, in Germany, France, and Canada, but these mapped onto political dissatisfaction with the country's ruling party. Thus, in France, protests against the required use of the *passe sanitaire* (later *passe vaccinal*) to gain entry into specified public spaces reflected much of the same discontent with the policies of Emmanuel Macron that had also fueled the "yellow vest" protests of 2019.[40] At stake in the European debates were explicit constitutional ques-

tions, such as the extent of the state's emergency powers and the proportionality of the state's mandates in relation to the solidity of the available evidence. Neither the dissidents nor the press cast the conflict as one over scientific validity, whereas American media continued to frame comparable U.S. conflicts as stand-offs between the authorizing forces of science and politics. As late as February 2022, two years into the pandemic, an editorial in *The Washington Post* declared, "Science, not politics, should dictate school mask mandates."[41]

Debates in Britain focused even less centrally on science or on epidemiological evidence. In sharp contrast to the U.S. case, the most politically visible controversies of the pandemic era had to do with rule-following by scientists, political officials, and the prime minister himself. The epidemiologist Neil Ferguson, the prime minister's chief strategy adviser Dominic Cummings, and eventually Boris Johnson all paid hefty political prices when each appeared to set himself above the constricting rules that applied to the rest of the British public. Boozy Downing Street parties, some attended by Johnson, called forth police investigations and sanctions, while images of these seemingly illicit gatherings circulated in social media alongside the poignant, dignified image of the Queen observing public health guidelines by mourning alone the death of her husband of seventy-three years. The British public by and large went along with the rules, taking special pride in winning the race to approve the first COVID-19 vaccine. Mask mandates were accepted as matters of public health prudence, and few recorded incidents emerged of conflict over people's acceptance or rejection of masking rules.

The point here is subtle, but profoundly important for the topic of trust in science and expertise. Only in the United States was science repeatedly represented, and called upon, as a direct authorizer of restrictions on public conduct. In other countries, from authoritarian China to democratic Western Europe and countries of the Global South, such as Brazil and India, conflict centered on the role of specific mediating bodies – elected or unelected officials, political parties, expert committees – responsible for translating knowledge to action. The institutional authority of science itself in the public eye proved most fragile in the country, the United States, whose dominant civic epistemology relies most heavily on maintaining a strict separation between facts and values. Put differently, trust eroded most where the alleged objectivity of science was called to substitute for a more open politics of representation, aggregation, and bridging.

Conventional wisdom in America calls for restoring trust in governing institutions by doubling down on technocracy's most sacred legitimating devices: scientific integrity, separating science from politics, and teaching science to publics constantly seen as being in a deficit of knowledge and understanding. This is consistent with the commitment to the distinction between epistemic truth and populist politics that has been a defining feature of this nation's

civic epistemology, as propagated by its intellectual and professional elites and by many democracy theorists. An approach grounded in STS suggests that this way of thinking will not get to the heart of weakened trust in our era of fractured facts and polarized parties. If there is something still to be taken away from Burke's prescription for how to restore trust in a time of profound discontent, it is that the answer lies in doing politics better – only, in modern times, that prescription has to extend beyond making stronger political collectives to improving the production of knowledge for politics. Parties alone cannot be the answer when the parties are separated by their understanding of the rightful connections between power and expertise. At the same time, mechanisms geared toward improving science communication or sampling public opinion on already defined policy issues are also likely to fall short by ignoring the intertwining of epistemic and political values.

Credible fact-making for policy purposes demands the same broad moves as are required for credible politics. Experts must represent things in the world in ways that give voice to diverse standpoints, aggregate disparate opinions to produce a measure of objectivity, and find persuasive ways to bridge the gaps between available and ideal states of knowledge. Expert practices in any society, moreover, must conform to its own recognized approaches to producing and testing public knowledge. Simply insisting on the authority of science without attending to the politics of reason and persuasion has proved not to restore trust in either knowledge or power. In a polarized political system like that of the United States, where each side doubts the other's epistemic integrity, there is no panacea that will magically restore trust. Modest beginnings can be made, however, with more inclusive processes for framing policy questions, greater attentiveness to dissenting voices and minority views, and humility in admitting where regulatory restrictions are based more on prudence and concern for others than on "sound science." Ultimately, the solution to a world whose "solemn plausibilities … have lost their reverence and effect" is not to walk away from the politics of truth, but to understand, improve, and knowingly embrace it.

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ENDNOTES

¹ Amos Tversky and Daniel Kahneman, "Availability : A Heuristic for Judging Frequency and Probability," *Cognitive Psychology* 5 (2) (1973) : 207–232.

² Sheila Jasanoff and Hilton R. Simmet, "No Funeral Bells : Public Reason in a 'Post-Truth' Age," *Social Studies of Science* 47 (5) (2017) : 751–770.

³ "Democracy dies in darkness" is the motto of *The Washington Post*.

⁴ Edmund Burke, *Thoughts on the Present Discontents and Speeches*, ed. Henry Morley (Salt Lake City : Project Gutenberg eBook, 2007 [1770]), https://www.gutenberg.org/files/2173/2173-h/2173-h.htm.

⁵ I am focusing on the United States in this essay, although loss of trust in government and expertise is a more pervasive phenomenon, heightened by the constraints of the COVID-19 pandemic, especially in democratic societies. The 2022 trucker rebellions that spread from Canada to countries such as Australia, France, and New Zealand are just one example of an international rebellion against what I have elsewhere called "public health sovereignty." Nonetheless, the almost fifty-fifty cleavage of the polity into opposing camps across a range of issues demanding expert judgment was unique to the United States before and during the pandemic era.

⁶ Charlie Savage and Heather Murphy, "Federal Judge Strikes Down Mask Mandate for Planes and Public Transit," *The New York Times*, April 18, 2022.

⁷ Steven Levitsky and Daniel Ziblatt, *How Democracies Die* (New York : Crown Publishing, 2018).

⁸ Hannah Arendt, "Truth and Politics," *The New Yorker*, February 25, 1967. Arendt offered as an example of an incontrovertible fact that Germany invaded Belgium in 1914 and not the other way around. The Russia-Ukraine war of 2022 renders that reading problematic in ways that others have noted but are beyond the scope of this essay.

⁹ Intergovernmental Panel on Climate Change, "IPCC Factsheet : What Is the IPCC ?" https://www.ipcc.ch/site/assets/uploads/2021/07/AR6_FS_What_is_IPCC.pdf.

¹⁰ Ludwik Fleck, *Genesis and Development of a Scientific Fact*, trans. Thaddeus J. Trenn (Chicago : University Chicago Press, 1979 [1935]).

¹¹ Sheila Jasanoff, *The Fifth Branch : Science Advisers as Policymakers* (Cambridge, Mass. : Harvard University Press, 1990).

¹² Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 1st ed. (Chicago : University of Chicago Press, 1962).

¹³ Sheila Jasanoff, *Designs on Nature : Science and Democracy in Europe and the United States* (Princeton, N.J. : Princeton University Press, 2005).

¹⁴ These are, of course, broad generalizations, but they are backed up by many case studies and longue durée observations. See, for example, ibid., comparing biotechnology regulation in Europe and the United States. One may also cite in this context relatively high degrees of American skepticism toward the findings of the Intergovernmental Panel on Climate Change and, more recently, even the COVID-19 policy recommendations of the Centers for Disease Control and Prevention. Both the IPCC and the CDC operate mostly in the expert committee mode.

¹⁵ Hélène Landemore, *Democratic Reason : Politics, Collective Intelligence, and the Rule of the Many* (Princeton, N.J. : Princeton University Press, 2013); and Hélène Landemore, "Beyond

the Fact of Disagreement? The Epistemic Turn in Deliberative Democracy," *Social Epistemology* 31 (3) (2017): 277–295.

16 Zeynep Tufekci, "How Social Media Took Us from Tahrir Square to Donald Trump," *MIT Technology Review*, August 14, 2018, https://www.technologyreview.com/2018/08/14/240325/how-social-media-took-us-from-tahrir-square-to-donald-trump/.

17 John Rawls, *Political Liberalism,* exp. ed. (New York: Columbia University Press, 2005); but see also Joseph Raz, "Facing Diversity: The Case of Epistemic Abstinence," in *Ethics in the Public Domain: Essays in the Morality of Law and Politics* (Oxford: Oxford University Press, 1995).

18 Landemore, "Beyond the Fact of Disagreement," 280–285.

19 Classic STS works that make this fundamental point include David Bloor, *Knowledge and Social Imagery* (Chicago: University of Chicago Press, 1976); Bruno Latour, *Science in Action* (Cambridge, Mass.: Harvard University Press, 1987); Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, Mass.: MIT Press, 1990); Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump* (Princeton, N.J.: Princeton University Press, 1985); and Brian Wynne, *Rationality and Ritual: Participation and Exclusion in Nuclear Decision-Making,* 2nd ed. (Abingdon-on-Thames: Routledge Earthscan, 2011 [1982]). See also Jasanoff, *The Fifth Branch*.

20 Yaron Ezrahi, "Science and the Political Imagination in Contemporary Democracies," in *States of Knowledge: The Co-production of Science and the Social Order*, ed. Sheila Jasanoff (London: Routledge, 2004), 254–273.

21 Alan Irwin and Brian Wynne, eds., *Misunderstood Misunderstandings: Social Identities and Public Uptake of Science* (Cambridge: Cambridge University Press, 1996).

22 Paul R. Gross and Normal Levitt, *Higher Superstition: The Academic Left and Its Quarrels with Science* (Baltimore: Johns Hopkins University Press, 1995).

23 Stephen Hilgartner, Sheila Jasanoff, and J. Benjamin Hurlbut, "Was 'Science' on the Ballot?" *Science* 371 (6532) (2021): 893–894.

24 David Michaels, *Doubt is Their Product: How Industry's Assault on Science Threatens Your Health* (New York: Oxford University Press, 2008); and Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (New York: Bloomsbury, 2010).

25 Robert Zaretsky, "The Trumpian French Doctor Behind the Chloroquine Hype," *Slate*, March 30, 2020, https://slate.com/news-and-politics/2020/03/didier-raoult-hydroxychloroquine-plaquenil.html.

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27 David Demortain, *The Science of Bureaucracy: Risk Decision-Making and the U.S. Environmental Protection Agency* (Cambridge, Mass.: MIT Press, 2020); and Daniel Carpenter, *Reputation and Power: Organizational Image and Pharmaceutical Regulation at the FDA* (Princeton, N.J.: Princeton University Press, 2010).

28 Fleck, *Genesis and Development of a Scientific Fact*. See also Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago: University of Chicago Press, 1962, 1987); Richard E. Benedick, *Ozone Diplomacy: New Directions in Safeguarding the Planet*, 2nd ed. (Cambridge, Mass.: Harvard University Press, 1998); Ronald Brickman, Sheila Jasanoff, and Thomas Ilgen, *Controlling Chemicals: The Politics of Regulation in Europe and the United States* (Ithaca, N.Y.: Cornell University Press, 1985); Paul N. Edwards, *A Vast Machine:*

Computer Models, Climate Data, and the Politics of Global Warming (Cambridge, Mass.: MIT Press, 2010); and Thomas Piketty, *A Brief History of Equality* (Cambridge, Mass.: Harvard University Press, 2022).

29 See references in endnote 19 above.

30 *Doctors for Life International v. Speaker of the National Assembly*, 2006 (6) SA 416 (CC) (South Africa).

31 Stephen Skowronek, Stephen M. Engel, and Bruce Ackerman, eds., *The Progressives' Century: Political Reform, Constitutional Government, and the Modern American State* (New Haven, Conn.: Yale University Press, 2016). For a useful listing of mechanisms of knowledge aggregation, see Stephen Turner, "Political Epistemology, Experts and the Aggregation of Knowledge," *Spontaneous Generations* 1 (1) (2007): 36–46.

32 Lorraine Daston and Peter Galison, *Objectivity* (Brooklyn and Cambridge, Mass.: Zone Books and MIT Press, 2007).

33 The idea of the "view from nowhere" is often attributed to Thomas Nagel's book of the same name. See Nagel, *The View from Nowhere* (Oxford: Oxford University Press, 1986). In STS usage, however, this is not an idealist position of objectivity but rather the sought-after endpoint of social practices that aim to shear away perspectival bias so that only detached truth is left standing in the end.

34 James S. Fishkin, *When the People Speak: Deliberative Democracy and Public Consultation* (New York: Oxford University Press, 2011).

35 J. Benjamin Hurlbut, *Experiments in Democracy: Human Embryo Research and the Politics of Bioethics* (New York: Columbia University Press, 2017).

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37 Christian Paz, "Anthony Fauci's Gen Z Cred," *The Atlantic*, April 22, 2020, https://www.theatlantic.com/politics/archive/2020/04/how-anthony-fauci-made-himself-meme/610330/.

38 Daxia Rojas, "America's Love Affair With an Elderly Epidemiologist," *The Jakarta Post*, April 19, 2020, https://www.thejakartapost.com/life/2020/04/19/americas-love-affair-with-an-elderly-epidemiologist.html.

39 These comparative observations are drawn from an ongoing and still incomplete study of responses to COVID-19 in sixteen countries that I am co-leading with Stephen Hilgartner of Cornell University under grants from the National Science Foundation and Schmidt Futures. For an interim report from January 2021, see Sheila Jasanoff, Stephen Hilgartner, J. Benjamin Hurlbut, et al., *Comparative Covid Response: Crisis, Knowledge, Politics – Interim Report* (Cambridge, Mass., and Ithaca, N.Y.: Harvard Kennedy School and Cornell University, 2021), https://compcore.cornell.edu/publications/.

40 Introduced by law on May 31, 2021, and later replaced by the *passe vaccinal*, the app provided proof of vaccination and was required for entry into such spaces as museums, restaurants, and certain forms of public transport.

41 The Editorial Board, "Science, Not Politics, Should Dictate School Mask Mandates," *The Washington Post*, February 12, 2022, https://www.washingtonpost.com/opinions/2022/02/12/science-not-politics-should-dictate-school-mask-mandates/.