Science, Politics, and the Pursuit of Truth
A fresh approach to fact-finding and negotiating

By Peter S. Adler

“As an adolescent I aspired to lasting fame, I craved factual certainty, and I thirsted for a meaningful vision of human life — so I became a scientist. This is like becoming an archbishop so you can meet girls.”

— Matt Cartmill
Professor of biological anthropology
Boston University

Most of us were taught that a “fact” is something that has been proven through scientific, legal, or rules-of-logic reasoning. Once established, facts become incontrovertible and irreversible knowledge — at least until similarly proven contrary information appears. But are facts really established only through analysis and competing assertions about the truth of a matter? Aren’t many “facts” negotiated?

Consider the following: A dozen people are meeting at a local community center on the island of Hawaii. They are halfway through a yearlong struggle to answer a set of important questions about hydrogen sulfide (H₂S), a chemical compound that is emitted as a colorless gas with the odor of rotten eggs. The human nose is sensitive to it, even at low concentrations, and everyone at the meeting has smelled it. H₂S is heavier than air and potentially poisonous, corrosive, and flammable at higher levels of acute exposure.

But what about chronic low-level emissions? Are people exposed to this chemical repeatedly from common sources such as sewers, septic tanks, old buildings, or hot springs slowly damaged? The particular emissions in question are a periodic byproduct from a 38-megawatt geothermal energy plant in the Puna District south of Hilo on the island of Hawaii, not far from Kilauea volcano. Hawaii is committed to energy independence, and geothermal is a part of the mix to get away from carbon fuels. The island of Hawaii has the hottest geothermal resources in the state.

But there are problems. Neighbors and anti-geothermal campaigners claim damages and resent the intrusion of an industrial energy plant in a rural...
area. For some, it is a not-in-my-backyard issue, with H₂S and other science and health questions part of a larger battle strategy. For others, it is an open question that needs answering. Plant operators and local and federal regulators see no evidence to substantiate claims of health harm. Local community members think otherwise.

So, in the face of escalating and vitriolic arguments, Hawaii County Mayor Billy Kenoi commissioned a mediated Joint Fact Finding Study Group to investigate the technical issues the community has raised. The group is composed of science-literate community members on both sides of the issue plus several outside experts who have academic backgrounds in gas chemistry, biostatistics, epidemiology, and volcanology. The questions:

- Does the plant emit H₂S?
- Is it damaging people’s health?
- How is it being monitored?
- What monitoring studies should be done to assess ongoing health and safety?

The mayor is committed to taking the results forward, finding funding, and moving ahead with whatever negotiated result the group might offer.

The Science-Intensive, Politically Snarky Dispute

My particular line of work as a mediator and planner focuses on stubborn, persistent, and sometimes seemingly “wicked” public policy problems. Many of these involve the regulations and laws that oversee and manage energy, natural resources, and public health. Science-intensive politically snarky disputes (SIPSDs), as I like to call them, more often than not pit the operating plants of industrial corporations, defensive government agencies, and outraged communities against each other. There are lots of sharp-elbowed data fights.

Good process, better communication, and improved relationships are essential but insufficient to deal with these fights. Coming to grips with the veracity of competing criticisms and defenses is just as necessary. This means finding a way to get a plausible set of facts on the table in the midst of highly charged debates.

In half a dozen states, agricultural practices associated with genetically modified organisms (GMOs) and pesticides are under attack from food safety groups. In the West, members of a Native American tribe want full stewardship rights in a national forest that is part of their customary home and are in dispute with the land practices of the federal government. In California, suffering from a prolonged drought, a large coastal desalination plant is proposed to produce new fresh water for a thirsty public, but environmental skeptics and community opponents argue that the plant’s subsurface intake systems will inhale and grind up local marine life. And across the country, worried parents contend that mandatory public health vaccinations put their children at a higher risk of autism.

Is there a factual pathway forward that can reduce some of these science-laden political frictions? Daniel Patrick Moynihan, a US senator, ambassador, and sociologist, famously said: “Everyone is entitled to his own opinion, but not to his own facts.” Moynihan was wrong. In the instantaneous world of tweets, posts, blogs, memes, reality television, accusations of fake news, and front-section editorials about local and national political dramas, everyone asserts his or her own facts — and claims that these facts are the ultimate truth.

Sometimes, in the give and take of high-profile science fights, challengers turn out to be right — about the dangers of lead in paint or tobacco as carcinogens, for instance. And sometimes the challenging views are wrong, as in “Alar on apples causes cancer,” “Laetrile cures cancer,” and “Vitamin C prevents the common cold.”

Amplified by media coverage and social media, outrage captures everyone’s attention. Some collisions involve new battles in running ideological and philosophical debates and in which science is used as a tactical shield or sword. Some of these seem like pitch-perfect examples of conflict escalation as described by Friedrich Glasl’s nine-stage model.

Are facts really established only through analysis and competing assertions about the truth of a matter? Aren’t many ‘facts’ negotiated?
Science-intensive politically snarky disputes (SIPSDs) ... more often than not pit the operating plants of industrial corporations, defensive government agencies, and outraged communities against each other. There are lots of sharp-elbowed data fights.1

of conflict escalation.1 In a seminal article, Glasl described how positions stiffen, differences amplify, views harden, debates exaggerate, and retaliation and revenge become motives in themselves.

When science- and fact-intensive controversies such as GMOs or vaccinations are stirred by social media, they fracture local communities and add additional fuel to old blue-red and right-left differences. In the pursuit of litigation and legislation, scientific and technical facts and the argumentation under and around them are then used as influence tools, sometimes with great distortion.

So if Moynihan was wrong, what are “facts?” And can they actually be negotiated? The usual answers from academic experts suggest a quick response of “no.” But in the realm of SIPSDs, those politically snarky disputes that are also science-intensive, facts are negotiated all the time. Even scientists working to recommend new procedures for pollution abatement or mosquito control acknowledge that their sciences aren’t bulletproof and often require updating and additional consensus-seeking when applied to decision-making.2 Facts turn out to be strangely mutable.

In general parlance, a “fact” is something that is considered to be indisputable, verified, supported by empirical proofs, and assumed to correspond to some particular aspect of reality.3 But facts are established differently, through various lenses. In science, a fact must be “falsifiable,” or disprovable through contrary evidence, before it can become accepted as a hypothesis or theory. This is often done by replication conducted under accepted scientific methods.

In law, facts are built on evidence that is subject to cross-examination and, as needed, determined by an adjudicator. In philosophy, facts are epistemologically and ontologically “true,” meaning they correspond with the way “knowledge” is created and states of “being” are evaluated. And in history, facts — dates, names, places — are often established by one group, the victors, only to be later revised by challengers.

Science isn’t devoid of its own politics, nor is it apolitical when it comes to planning and policymaking. “Scientists,” says political and cultural critic Virginia Postrel, “have gotten way too fond of invoking their authority to claim that ‘science’ dictates their preferred policy solutions and claiming that any disagreement constitutes an attack on science. But, even assuming that scientists agree on the facts, science can only tell us something about the state of the world. It cannot tell us what policy is the best to adopt.”

In the raucous world of SIPSDs, finding methodological errors, cognitive biases, or conflicts of interest are common ways of deconstructing someone else’s facts. But as Adam Gopnik, writing in The New Yorker 50 years after the assassination of President John F. Kennedy, put it, all alleged facts “… come with their own shakiness, their own shimmer of uncertainty. When we pull the thread, there’s a tangle waiting.”4

In my domain, the world of mediated negotiation, nothing can be considered a fact until we all agree it is a fact or an ultimate authority adjudicates it. Until then, facts are negotiated social, cultural, political, and economic constructions. In SIPSDs, as in many other domains, consensus is the coin of the realm.

How Different Groups and Professions Engage

“Culture” has many definitions, but the one I like most is: “Culture is the way we do things around here,” “here” being the critical unit of analysis. It sweeps together many possible dimensions and allows for a more specific analysis of the cultural contexts involved in a negotiation. The unit of “here” could be an ethnic or culture group, a neighborhood, a business, a forest, or any group or place that claims
an identity. And it will always involve overlapping identities, since all of us are more than one thing.

When negotiators from different constituencies come together to grapple with a SIPSD problem, they interact with the communication constraints imposed by their particular “here.” Posturing and extreme positioning is normal and expected, especially if the parties to an issue are using social media to press or defend their points.5

Government agents comfortably speak in a certain “officialese” that keeps them within the safe boundaries of their legal and regulatory mandates. Unless they are operating in fully assured confidentiality settings, corporations and industrial groups typically tend to put out only the information that is required of them by law and withhold information that they view as “business proprietary.” Communities and advocacy groups, on the other hand, often come to the table distrustful of both government and industry and express their anger, fear, and arguments with sharp elbows and high emotion.

Scientists, engineers, lawyers, economists, politicians, and community advocates also bring distinctly different and profession-centric modes of engaging. They search for information, screen facts, and solve problems through their own “here” lenses. Consider the following professional world views as described by Winfried Lang in a chapter of the 1993 Culture and Negotiations. These world views come into play when advocates sit down to try to negotiate remedies to GMOs, vaccinations, climate adaptations, or other SIPSDs.6

Beyond these organizational, professional, and disciplinary differences, SIPSDs have other characteristics

<table>
<thead>
<tr>
<th>INDICES</th>
<th>ENGINEERS</th>
<th>LAWYERS</th>
<th>ECONOMISTS</th>
<th>POLITICIANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CULTURAL VALUES</td>
<td>The laws of physics, Technology, computations, materials, designs</td>
<td>Statutory laws, Authority, precedent, the sanctity of the contract; rules in general</td>
<td>The laws of economics, Theories and statistical data</td>
<td>The laws of survival, Patrons, parties, and partisan loyalty</td>
</tr>
<tr>
<td>Believe in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have respect for:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULTURAL PERSPECTIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See themselves as:</td>
<td>Builders and problem-solvers</td>
<td>Defenders of justice, partisan advocates</td>
<td>Planners and policy advisers</td>
<td>Defenders of the public interest, mediators, ultimate decision-makers</td>
</tr>
<tr>
<td>Express themselves through:</td>
<td>Numbers and works</td>
<td>Technical words and documents, Parties' good intentions and pledges</td>
<td>Money</td>
<td>Approvals and directives</td>
</tr>
<tr>
<td>Suspicious of:</td>
<td>Timely project “simple-mentation” and worker performance</td>
<td></td>
<td>Socio-political variables</td>
<td>Rival bureaucrats and ambitious subordinates</td>
</tr>
<tr>
<td>NEOTIATING STYLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team role(s):</td>
<td>Leader or technical specialist</td>
<td>Leader, spokesperson, technical adviser, or excluded</td>
<td>Leader or financial adviser</td>
<td>Leader</td>
</tr>
<tr>
<td>Negotiating focus:</td>
<td>Technical specifications</td>
<td>Parties' rights and duties</td>
<td>Costs, prices, payments</td>
<td>Satisfying superiors, avoiding criticism</td>
</tr>
<tr>
<td>Future concern:</td>
<td>Project implementation</td>
<td>Conflict resolution</td>
<td>Cash-flow risks</td>
<td>Project completion</td>
</tr>
<tr>
<td>Communication style:</td>
<td>Precise and quantitative</td>
<td>Precise and logical, but perhaps argumentative</td>
<td>Technical and conservative</td>
<td>Cautious and self-protective</td>
</tr>
</tbody>
</table>
that tend to ignite and amplify conflict. SIPSD participants often braid together political, moral, economic, social, and technical arguments when they sit at the same negotiating table. These disputes involve not just stakeholders but “rights” holders, overlapping governmental jurisdictions with different missions and authorities, other interest groups that are not at the table, high economic and political stakes, and problems that often have irrevocable intergenerational consequences. Equally important, they almost always involve incomplete or contested scientific and technical uncertainty.

**Negotiated Joint Fact-Finding**

Joint fact-finding is a specialized negotiation process that leaders can set in motion to help prevent, manage, or resolve SIPSDs. At its simplest, joint fact-finding is a carefully designed working group composed of stakeholders and rights-holders and scientific and technical experts who are invited to engage in a rigorous analytical deliberation. Increasingly, a mediator or facilitator is used to assist. With or without third-party help, joint fact-finding carves out key technical and scientific questions that seem to be at the heart of a controversy. The goal is to illuminate the reasons for disagreement and map areas of factual agreement that all parties can respect. The process thus helps build a platform for potential policy agreement.

Depending on the situation, joint fact-finding can be embedded as part of a larger consensus-seeking effort or set up as a “stand-alone” process. It can focus on the latest scientific and technical information available and sort out key factual signals in the white noise of more heated assertions. It can reduce some of the unnecessary friction that emerges when factions take sides and help build sounder public policy by creating an agreed-upon base of knowledge. It helps everyone focus.

Joint fact-finding doesn’t replace legislative, judicial, executive, or regulatory decision-making, but it is usually initiated by a political leader in one of the branches of government to help streamline some of the disagreements that are at the root of opposing stances. While no two joint fact-finding processes are exactly alike, a group’s charter or mission is usually specific and fashioned to bring back practical results. Those might be an agreed-upon foundation of facts that might be considered for developing a new law, rule, standard, or policy. Or a joint fact-finding could be used to develop an agreement by all parties on the specific research needed to advance policy or produce specialized work products such as estimates, trends, forecasts, or cause-and-effect analyses.

In March 2015, negotiation scholars and practitioners from the United States and Japan met to take stock of the theory and practice of applying joint fact-finding to SIPSDs. While procedures varied greatly across circumstances, some of the common ingredients for success included a political champion, agreement by key players to constructively engage, a well-framed task, sufficient resources, skilled project management, and a nexus back to legislative, judicial, or administrative decision-making. The results need to carry real importance so any given joint fact-finding doesn’t devolve into an academic exercise or engage stakeholders in a meaningless exercise.

In the instantaneous world of tweets, posts, blogs, memes, reality television, accusations of fake news, and front-section editorials about local and national political dramas, everyone asserts his or her own facts—and claims that these facts are the ultimate truth. Facts turn out to be strangely mutable.
Back to the Island of Hawaii

As directed and funded by the County of Hawaii, the “Geothermal Public Health Assessment” joint fact-finding had three objectives:
• Identify key public health questions pertinent to the production of geothermal energy in the Puna region;
• Create a reliable inventory of existing studies pertinent to those issues that can serve as references for decision-makers; and
• Recommend the priorities and preferred methodologies for future scientific and monitoring studies.

After nine months of hard negotiating, the joint fact-finding study group brought forward a series of findings and recommendations that included undertaking a comprehensive health effects study regarding chronic exposures of low levels of H₂S, beginning with a meta-analysis; establishing a much improved air monitoring system to capture exposure data; ensuring that there is no ongoing contamination from an old nearby geothermal energy production test site, and improving real-time communication on incidents at the existing plant.

All the recommendations were embraced. Some have been completed, others are in progress. As always happens in difficult and politically important negotiations, not everyone involved was completely happy, but they all were reasonably satisfied. There was a consensus that everyone could “live with.” New facts are now on the table, and consensus is again the coin of the realm.

Peter S. Adler is a planner and mediator based in Honolulu who directs the ACCORD3.0 Network (www.accord3.com), which involves strategic public policy consultants in efforts in North America, Asia, Europe, Australia, and the Pacific. He has held executive positions at the Keystone Policy Center and the Hawaii Supreme Court. He can be reached at padleraccord@gmail.com.