

# CONNECTIONS

An Annual Journal of the Kettering Foundation | 2017

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## Recasting the Narratives That Shape Our Public Life

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## Being a Civically Engaged College

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Experiments in  
**DEMOCRATIC  
CITIZENSHIP**

The Kettering Foundation is a nonprofit, operating foundation rooted in the American tradition of cooperative research. Kettering's primary research question is, what does it take to make democracy work as it should? Kettering's research is distinctive because it is conducted from the perspective of citizens and focuses on what people can do collectively to address problems affecting their lives, their communities, and their nation. The foundation seeks to identify and address the challenges to making democracy work as it should through interrelated program areas that focus on citizens, communities, and institutions. The foundation collaborates with an extensive network of community groups, professional associations, researchers, scholars, and citizens around the world. Established in 1927 by inventor Charles F. Kettering, the foundation is a 501(c)(3) organization that does not make grants but engages in joint research with others. For more information about KF research and publications, see the Kettering Foundation's website at [www.kettering.org](http://www.kettering.org).

*Connections* is published by the Kettering Foundation, 200 Commons Road, Dayton, Ohio 45459. The articles in *Connections* reflect the views of the authors and not necessarily those of the foundation, its directors, or its officers.

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ISSN 2470-8003

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# Science and the Cultivation of Public Judgment

By Daniel Sarewitz

**D**emocratic politics—to adjudicate value disputes—and structured rational inquiry—to establish a factual basis for action—are foundational aspects

of Western society, but I want to put on the table the proposition that there are big problems in the relation between the two. When science is relevant to political questions, everyone wants it to be on their side, as it symbolizes some kind of unified, theoretically and empirically validated way of looking at the world. People want to be able to claim they are basing their decisions on that. So, there is powerful appeal to the idea that if we can bring science to bear on political problems we are trying to address, this will improve our ability to act. There is some truth to this, of course. More insight about the factual elements of political challenges can help guide better action.



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## KETTERING FOUNDATION RESEARCH

has long found that there is real political power to be had in the way issues are named and framed. The manner in which a problem is articulated has the power to either engage people as citizens and actors or push them to the sidelines as spectators. At the same time, the manner in which issues are framed has the power to produce fruitful conversations, during which options and trade-offs are evaluated, but it also has the power to produce divisiveness and unproductive debate. Kettering has seen these fundamental problems of issue naming and framing play out across a wide range of arenas and topics. Lately, though, it seems as though a certain class of problems, those with a scientific component, are especially mired in polarization and rancor.

With this as background, Kettering set out to find whether there was anyone in the natural sciences, frustrated with the current state of affairs, who might want to explore new ways forward. This led to an exploratory research exchange at the foundation entitled “Science and the Cultivation of Public Judgment.” Building on this exchange, Daniel Sarewitz later joined us as a featured speaker during a Dayton Days research session. Out of this came the present opportunity—collaborative research between the Kettering Foundation and Daniel Sarewitz and his colleagues at Arizona State University’s Consortium for Science, Policy, and Outcomes (CSPO).

As it currently stands, there are a number of domestic and international initiatives in the “science and democracy” ballpark. However, many of these operate from a deficit standpoint, meaning that the real problem is usually articulated as a matter of citizens lacking scientific literacy. A proper understanding of the issue at hand is certainly important, but so too is the manner in which issues are named and framed. If issues are named and framed in technical ways that fail to consider what is valuable to citizens, there will be great difficulty in engaging citizens and

But, sometimes this is a deceptive and unhelpful way to look at things. To start with, the very idea of “science” is a complex one. Alvin Weinberg, a physicist who headed Oak Ridge National Laboratory and first worked on nuclear weapons and then on nuclear power generation, was one of the first to understand that the types of science called upon to address questions relevant to politics were different than standard lab science. In the 1960s, for example, Weinberg and other physicists were being asked to address questions about long-term nuclear power safety, about nuclear waste, and risk, and it turned out those were questions scientists could certainly study, but would never be able to answer definitively. He called that sort of endeavor—when questions could be asked of science, but science could not provide certain answers—“trans-science.” And it turns out that on many public issues, the complexity of reality, and the mix of values and facts, is such that definitive knowledge cannot be achieved.

For example, should women in their 40s and 50s get mammograms? The question sounds like one for science. But there is no one way to look at the problem. Breast cancer comes in many varieties and is influenced by many factors ranging from genetics to diet; the state of

knowledge about the disease, and the therapies available to deal with it, are constantly evolving; and people have different views of acceptable risk. Trying to answer what seems like a simple question turns out to foster endless debate among scientists, doctors, and patient-activists, and the idea that a set of facts can dictate that decision goes up in smoke. In such cases, facts and values are not separate. Facts can be assembled and interpreted in ways that align with one set of values or another. This isn't a matter of bias; it's a matter of a complex world that can be interpreted through many lenses. If you are worried about unnecessary treatment from false positives, you are viewing the question of mammograms through a different lens than if you think everything should be done to protect every life possible, no matter what. So, the question raised by trans-science is how to make science and democracy work together productively.

Some of the underlying themes I've heard at the Kettering Foundation have to do with erosion of public trust in institutions. We see skepticism around some things scientists have to say, but the public still buys into the notion that advancing knowledge is important for society. Science remains a highly trusted institution.

promoting productive conversations. After all, these issues are matters of judgment—ones in which citizens in communities must collectively decide what they ought to do about the problems that confront them. What can be done to jump-start the routines through which citizens and communities begin to exercise the judgment necessary to confront these thorny issues?

The idea here is to try something different—for a group of scientists to experiment with the democratic practices of naming and framing, such that citizens and communities might productively confront difficult issues on the horizon. As Sarewitz mentions, the issue at hand is self-driving cars, the emergence of which raises a number of economic and safety concerns that communities will be forced to confront. To do this, CSPO will start in the community with citizens (as opposed to starting with policymakers or experts) to ascertain what concerns people when they think about self-driving cars. These citizen concerns and expressions of things held valuable will serve as the basis for an issue guide that communities might use. Two CSPO members have participated in a Kettering exchange of issue guide writers to learn and share ideas with others around the country who are similarly attempting to more democratically name and frame issues. We at Kettering stand to learn a great deal from CSPO's efforts. We will be able to see, through an issue guide, how a complex scientific issue can be named and framed. Perhaps more important, though, we will learn from the reflections of the CSPO scientists themselves. What did they learn through this work? How, if at all, will this impact what they do moving forward? Are these democratic practices consistent with their role as scientists?

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*Driverless car focus groups held in Baltimore and Cumberland, Maryland, August 2017.*

But that could change. Scientists often say “don’t politicize science.” Yet, science cannot help but be politicized because in the real world, science and values are often impos-

sible to separate. So the authority of science—which comes from its amazing success at unraveling natural phenomena—is imported into the political arena and applied inappropriately to problems that are trans-scientific.

Such efforts to “scientize” democracy are increasingly familiar. But issues like climate change, genetically modified foods, and the regulation of toxic chemicals, in which science (actually trans-science) has been asked to do the work of democratic politics, typically spiral into endless controversy, often carried out in the guise of technical debate.

Trans-science issues often are associated with dilemmas related to technology—whether it’s breast-cancer screening or regulating the combustion of hydrocarbons. Technological change is a powerful



force of social change—perhaps the most powerful such force in today’s world—yet it is rarely subject to focused, anticipatory democratic deliberation. Self-driving cars appear to be the future of personal transportation. At the convergence of rapid innovations in artificial intelligence, technology platforms, and transportation, autonomous vehicles are poised to revolutionize all aspects of mobility. The broad diffusion of self-driving cars into society—which by some estimates could occur as soon as the next decade—represents an example of “creative destruction,” a term used by the economist Joseph Schumpeter to describe the incessant process of new technologies and industries replacing older ones.

Creative destruction, as the term itself implies, can be destabilizing and disorienting. Some of these changes are positive and some are harmful, but it is impossible to know in advance what all of the costs and benefits will be or how they will be distributed across society, over time, and at different scales. Because these changes are so significant and wide-ranging, the voices and values of everyday citizens must play a central role in the decisions that determine how technological advances affect broader society. When citizen voices are added to professional expertise and other forms of knowledge,

choices can better reflect, include, learn from, and align with public values and concerns. ■

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