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Energy policy and research: The underappreciation of trust

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ABSTRACT

The paper defines trust as believing that a person(s) or organization(s) can be relied upon to accomplish objectives because they are competent and possess values and intentions that are consistent with all or part of the public. Section 3 discusses public trust of specific professions and organizations, including the U.S. Nuclear Regulatory Commission, U.S. Department of Energy, and others in the energy field. Section 4 examines the importance of trust compared to risk perception and other drivers of public preferences. This section also shows that trust changes, almost always decreasing because of incidents and greater salience of negative information than positive information. It also considers the role of the media in amplifying mistrust, and it ends by considering the role of communications in building or reducing trust. Section 5 identifies six priority research topics. The two most important are case studies from Africa, Asia and South America, and more focus on non-nuclear energy sources, that is, coal, gas, and other forms, as well as waste management, and transportation processes.

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1. Introduction

In 1998, President William Clinton was involved in a scandal with student intern Monica Lewinsky. An effort to impeach the President failed. As the events unfolded, the Pew Research Center, a nonpartisan research group that studies policy issues and trends, began collecting data. In late January 1998, when the scandal was growing, 40% of respondents rated the “Clinton-Lewinsky scandal” as of “great importance” and 38% felt it was of “little” or “no importance” [1]. Yet, Pew analyses show that by early February 1998, the proportion who believed that the Clinton-Lewinsky issue was very important fell to 25% and the proportion who said little or no importance rose to 46%. These last pair of proportions changed little during the remainder of 1998.

President Clinton survived, despite the fact that 70% believed that his relationship with Lewinsky was “very wrong” and 68% “disliked” the President. Both of these numbers were clear evidence that the public felt that Clinton had violated a moral value. Pew argues that he survived because he was considered competent by the public. Pew surveys showed approvals of policies of 67–82% among Democrats for the President’s education, crime, social security, Medicare, and health care programs. Even among

Republicans, the proportions supporting the policies were 50–74%. In short, Pew concluded that competence-based trust trumped values-based trust in this case [1]. I find it hard to believe that American history would not have changed had President Clinton been impeached.

In contrast to distrust, a reservoir of trust can increase the chances of implementing a program. One of my favorites is around neighborhood redevelopment, where a trusted group of residents is an essential ingredient for building community social capital. For example, Pew conducted a survey of 2517 residents of metropolitan Philadelphia, finding that the strongest predictor of building local social capital for neighborhood improvement was feeling empowered [2]. Trust in neighbors was related to feeling empowered. Long-term neighborhood residents and homeowners were the most empowered and trusting of their neighbors and government, and they were the ones most involved in neighborhood redevelopment groups and plans. Some factors out of the control of neighborhood groups are essential for successful redevelopment, but this survey underscores the necessity of having a core of trusted and trusting people as redevelopment leaders. These examples of President Clinton and neighborhood social capital have parallels in energy systems and policy.

This essay focuses on public trust of government officials, and of for-profit and not-for-profit organizations responsible for generating energy, managing energy-related wastes, and associated transportation systems, such as trains, ships, trucks, and pipelines.

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The essence of the essay is to show that the energy industry and government in some cases have been blocked from meeting their objectives by losing the trust of the public and elected officials, and once lost trust is hard to regain. It calls for research needed to fill some glaring gaps in our knowledge about energy and trust.

The paper has four parts. The first defines trust. The second examines how much we trust authorities in the energy field. Part three describes how important trust is in the policy process, focusing on the ongoing Yucca Mountain repository controversy in the United States and the transport of nuclear waste as illustrations. This section then discusses the role of distrust as a symptom of opposition to a policy, or as a cause of it, the debate about whether trust changes, and ends by considering whether public-management interactions increase or decrease trust. The final section focuses on six trust-related research priorities.

I made three choices about what literature to feature. First, when possible, I used examples about energy from the United States and the European Union. Second, I have not gone back to Aristotle [3] who wrote about trust in 350 BC in ways that would fit comfortably with today's discussions. Yet, I chose some of the older trust literature rather than succumbing to the natural tendency to choose the most recent literature because in most cases the initial papers more thoroughly present psychological, ethical, economic, legal and other underpinnings of trust. Third, explanations of relationships between trust, location and technology preferences are enhanced by examples, and I have used some of my data for this purpose.

A caveat is in order about what this essay does not include. Intra-organizational trust is an important subject. If employees and manager do not trust each other to be competent and to respect each other, problems can occur ranging from uneven production to major industrial accidents. While intra-organizational trust is beyond the scope of this paper, I recommend several case studies that involve energy production as a starting point [4–7]. In addition, in the wake of massive natural hazard events, I briefly address public trust in organizations and people responsible for reducing vulnerability associated with massive energy releases from hurricanes, tsunamis, Nor'easters, and other natural hazards. This is only briefly discussed in the essay (Sections 2 and 4.1).

2. What is Trust?

As part of my undergraduate planning and policy class, I ask the students to define trust. At first, they struggle, indicating only that they know when they trust someone. But they are not sure why. After 15–20 min, we reach a consensus that trust means believing that a person(s) or organization(s) can be relied upon to accomplish objectives because they are competent and possess values and intentions that are consistent with those of the students'.

Empirical research supports the dichotomization of trust into competence and values. For example, Siegrist et al. [8] studied trust in the context of public concern about electromagnetic fields. They found that more trust was associated with less concern about EMF, which they attribute to perception of shared values and competent operations. The authors conclude that a "dual" model of trust and confidence exists, in other words, they draw a distinction between confidence (competence) and social trust (values). Poortinga and Pidgeon [9] used over a dozen questions to classify trust. In one study that included five kinds of hazards (including radioactive waste), they found a "general trust" and then a "cynicism" component (the latter included that government distorts facts, changes policies without good reason, and is too influenced by industry). These fit with competence and values.

Peters et al. [10] found trust to be grounded in perception of expertise, knowledge, honesty, openness, and a demonstration of care; all of these are indicators of competence or values. Earle [11] observed that values can be divided into objectivity and fairness, including lack of bias, adequate representation of viewpoints, and other indicators of value. He notes that these values are difficult to achieve when managers are dealing with markedly opposed and uncompromising public positions. Earle suggests that persuading people to focus on those things that they agree about rather than disagree about will build trust.

Meltay [12], focusing on the U.S. Department of Energy, observed that researchers are making the concept of trust too complicated, and he divided trust into competence and care. I agree and suggest that for purposes of energy research and policy the simple dichotomy that my classes arrive at and many empirical studies confirm will suffice: competence and values. This dichotomy does not mean that researchers can understand trust by asking two questions, one that asks about competence and a second about values. I have asked as few as six questions and as many as a dozen [13,14]. I have asked about perceptions of technical ability to operate equipment, prevent hazards in groundwater from migrating off the site, to monitor the environment and workers for health symptoms, prevent intruders from gaining access to a site, keep workers up-to-date about the latest science and safety information, and other indicators of competence. In regard to values, I have asked about perceptions of fairness, bias, and willingness to listen and communicate, among others.

After much experimentation studying the DOE's major defense sites (Hanford, Idaho National Laboratory, Oak Ridge National Laboratory, Savannah River, and the Waste Isolation Pilot Plant (WIPP)), I consistently ask about the ability of the DOE to prevent on-site contaminants from seeping off site and the ability of the DOE to manage new nuclear-related activities and facilities as my two standard competence questions. The most informative question about values that I have found asks about the honesty of DOE's communications with the public. I ask the same three questions about contractors [14,15].

I am not suggesting that readers use these six or any of my questions as indicators of competence and values. For example, if I were asking about transporting spent fuel, I would ask about DOE, the Nuclear Regulatory Commission (NRC), the U.S. EPA, the U.S. Department of Transportation and state and local government about transportation. What I am suggesting is that researchers should work with site officials and other key stakeholders to formulate metrics of competence and values that are directly related to policy issues. Typically, these should include standard questions that have been asked in prior surveys so that the analyst can compare results to other studies, and then there should be specific questions fine-tuned to the specific objectives of the research.

Here is an illustration. In 2013, in the wake of Hurricanes Irene (2011) and Sandy (2012), I investigated the New Jersey public's willingness to support rebuilding of devastated parts of the state. With an estimated damage cost of over \$30 billion and likelihood of receiving \$20–25 billion from the federal government and private insurers, we estimated a shortfall of \$5–\$10 billion [16]. We asked residents of New Jersey whether they were willing to contribute to a special fund to be dedicated to rebuilding devastated areas. The vast majority were unwilling, and we found that mistrust of the state was a strong predictor of their unwillingness to contribute. Many did not trust state government to use a dedicated fund for the designated purpose. They cited several instances in recent history where the state government diverted money intended for education and anti-smoking campaigns to the general treasury. This study illustrates why it is imperative to try to measure trust, what explains trust, and how it changes.

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