

The importance of trust: Science, policy, and the publics

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We are facing a complex, multi-faceted, and seemingly intractable crisis of confidence: Scientists alternate between bravado, secrecy, and defensiveness; they sometimes seek advice from ethicists and lawyers, who, of course, disagree with one another, and have vested interests of their own; politicians, seemingly concerned as much with re-election as with promoting the public good, try to reconcile competing values by seeking advice from these dysfunctional communities of experts; not surprisingly, then, "expert" opinions are put to partisan uses, members of the lay public feel ignored, and, at bottom, we all end up practicing politics, not democracy.

Public interest in science is high, but public trust is waning. Scientists are sometimes seen as self-interested rather than as serving the greater good. Moreover, in public debates over science, scientists often seem to believe that any hostility toward scientific research must be based in misunderstanding of facts, rather than differences in values and interests. Public interest and public trust must be fostered through effective public dialogue and openness, the outcome of proactive collaboration between ethicists, scientists, and policy-makers. Both the form and the content of that dialogue will be important, and to be effective it cannot be controlled by any one group or single interest.

In the context of stem cell research, policy decisions will reflect a balance of competing values and interests. Sound policy decisions will emerge from an effective public dialogue, within which scientists have an important role to play. But policy decisions are not scientific decisions: "science can alert us to problems, and can help us understand how to achieve our goals once we have decided them; but the goals can emerge only from a political process in which science should have no special privilege" (Sarewitz, 2004b). How, then, should we connect the dots between science, policy, and the public good?

California's Proposition 71

In November 2004, California voters passed the California Stem Cell Research and Cures Initiative (Proposition 71), approving \$3 billion of government funding for stem cell research. As an amendment to the state constitution, it created an unprecedented "right to conduct stem cell research." In doing so, Proposition 71 turned the "privilege of conducting publicly funded research into an absolute legal protection for stem cell researchers, while offering no equivalent protection for the citizens who would be the voluntary subjects of that research" (Sarewitz, 2004). For instance, the Independent Citizens Oversight Committee that was formed as part of the California Institute for Regenerative Medicine (CIRM) consists entirely of people who have a stake in the success of stem cell research.

A success story?

Proposition 71 was touted as "one of the most transparent and democratic scientific processes in U.S. history" (Magnus, 2004). It is more accurate to depict the campaign for Proposition 71 as propaganda designed to persuade rather than inform or educate California voters. Television commercials and websites dramatically underplayed the complexity of the science, offering instead a very simplistic presentation of deeply complex philosophical and ethical questions. The campaign succeeded in painting opponents of Proposition 71 as religious conservatives – despite many liberal detractors concerned about the lack of transparency and accountability implicit in the ballot measure.

Fast forward one year and none of the \$295 million earmarked for stem cell research this year has been spent. Why? Legal challenges have prevented CIRM from borrowing any of the money. Lawsuits questioning the legality of the stem cell institute have been filed to address issues of royalties and intellectual property rights as well as standards of public accountability and transparency. Stem cell scientists can learn an important lesson: hype and hubris are two-edged swords.

Democratizing science

When democratic debate is impoverished and uninformed, as it was in California, important issues and values are ignored. Well-informed and well-intentioned public dialogue is a conversation neither science nor society can afford to sacrifice. How do we make science and democracy fit together?

"Democratizing science does not mean settling questions about Nature by plebiscite any more than democratizing politics means settling the prime rate by referendum. What democratization does mean, in science as elsewhere, is creating institutions and practices that fully incorporate principles of accessibility, transparency, and accountability. It means considering the societal outcomes of research at least as attentively as the scientific or technological outputs. It means insisting that in addition to being rigorous, science be popular, relevant, and participatory." (Guston, 2004)

A recipe for science and society

Accountability: One who is accountable is one who may be called to answer for her actions, and so one who assumes responsibility. To whom are scientists and ethicists accountable, and for what?

Transparency: Transparency is the converse of privacy. Transparency permits the exercise of accountability. But while transparency may prevent secrecy, it may not limit deception and deliberate misinformation. Hence the need for accessibility.

Accessibility: Meaningful and informed debate can take place only when people have access to knowledge. Accessibility therefore involves providing resources explaining proposed or ongoing research, including its goals, complexities, and attendant risks.

Deliberation: Science *qua* science does not trump all other interests, but reliable and benevolent science is an important consideration in public deliberation about the direction and governance of scientific research.

Baking tips:

- Science is not trustworthy just because it is science, but rather only *when it is* trustworthy science. Trustworthy science is **credible, salient, and legitimate** (Cash et al. 2001).
- "Well placed trust grows out of active inquiry rather than blind acceptance" (O'Neill, 2002).

Finding meaning in innovation

Today's society is characterized by uncertainty and rapid change. How should decisions about science and society be made in the face of many unknowns and multiple conflicting values? The relationship between science and politics is complex and difficult, and science can never save us from politics, just as it should not subvert important political processes. Scientists, social scientists, ethicists must come up with new strategies for collaborative engagement. Debates must be structured such that evaluations of particular values are not overshadowed by fights about the likelihood of future possibilities, rather than their *desirability*.

Science, technology, and ethics all contribute to the construction of society together, but their efforts are not always collaborative. Ideas for enhancing the linkages between those domains include:

- **Scenario development and deliberation**
 - "Scenario planning is a discipline for rediscovering the... power of creative foresight in contexts of accelerated change, greater complexity and genuine uncertainty" (Wack, 1984).
 - Scenario development and deliberation serve many ends, but will be successful if those involved learn from the deliberations, and the quality and focus of public and bioethical discourse about the future of biotechnology is improved.
- **Real time technology assessment (RTTA)** (Guston and Sarewitz, 2001)
 - Through empirical, conceptual, and historical studies as well as public engagement exercises, the goals of RTTA are: to assess possible societal impacts and outcomes; develop deliberative processes to identify potential impacts and chart paths to enhance desirable impacts and mitigate undesirable ones; and evaluate how the research agenda evolves.

Science can progress responsibly when:

Scientists

- Are not trying to hide or to downplay the controversies and risks associated with their research;
- Participate in open public debate about the research they want to do and why such research is justified.

Ethicists

- Are scientifically well-informed without treating the science as unassailable;
- Do a better job structuring the ethical debate so it remains focused on important substantive issues rather than ideology, false dichotomies, and polemics.

Policy-makers

- Engage with the scientists, ethicists, and publics to fairly balance competing interests in line with the democratically ascertained public good.

For further reading

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For further information

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