

Scenarios of Nanotechnology Development

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This paper pursues the dramas of balancing persuasion, provocation and plausibility in a national scenarios project focused around the societal implications of nanotechnology. Nanotechnology promises and threats revolutionary change, yet such expectations often remain oversimplified, hyped or tacitly held. One of the aims of the NSF funded Center for Nanotechnology in Society (CNS) (see Guston and Sarewitz 2002) is to reflect to larger audiences some of the trickier dilemmas that nanotechnology could produce and as such open the future to critical reflection. Taking seriously decades of research in Science, Technology and Society (STS), this effort creates space for the reflexive co-evolution of science, technology and society (Rip 2002).

Given nanotechnologies' immaturity and the futurity of some of its more lurid and beautiful claims, scenarios will be employed to position the intervention firmly in the future. This intentional move relies on evidence that scenarios are an effective tool to focus discussions about longer term futures in such a way deal with complexity and uncertainty (Wack 1984; van der Heijden 1996). The CNS scenarios are designed as naïve product scenarios. As a departure from more traditional expressions of scenario planning, these scenarios are expert produced and are intended to be the starting point of the process, rather than a conclusion. Another unique feature of this scenario project is the extreme focus on technology. Rather than constructing elaborate worlds that include politics, social movements and economic systems, these scenarios are limited to describe a nano-enabled product, much like ad copy for a tech company.

Our hope is that the invited participants (4000+) will critique them and elaborate on the stories in such a way to add context in a collaborative fashion. Of critical importance is that the scenarios should be deemed plausible and hence a substantial vetting effort is being made prior to their dissemination. Further, they should be provocative and persuasive enough to encourage a fruitful debate and evoke social learning. Such a project suggests predicaments for theory. That is, what does plausibility mean for future stories? In dealing with anticipatory knowledge- projections, visions and expectations- what counts as valid and trustworthy knowledge? What becomes of evidence and proof in the face of imagined outcomes of present day research? To further complicate matters, different communities of practice have different modes of establishing what counts as knowledge (Knorr-Cetina 1999). In a field like nanotechnology that is comprised of physicists, chemists, computer scientists, engineers, biologists-not to mention publics, policy makers and research managers- this ambiguity in epistemology is no trivial matter (Selin 2002).

The aspiration to produce plausible scenarios puts in tension the dual aim to produce scenarios that are provocative. Scenarios are meant to shake things up, to question assumptions and to instigate reflection about uncertainties, implications and deeply held beliefs about science and progress. Persuasion strangely ties together plausibility and provocation in that the scenarios must be credible and compelling at the same time. The combination of these desires- for plausibility, provocation and persuasion- frame more general problems of trust and expertise in the quest towards anticipatory governance.

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