

Panel Presentation  
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Nanoscale Research and Scientific Practice



# Grounded Theory Methodology

## Primary Sources of Data

- Private, biannual conversations
- Group meetings and laboratory work
- Journal Articles
- Professional Meeting Presentations
- Fictional Short Stories

# Sample Discussion Questions (1)

- Ethical issues connected to research?
- To nanotechnology development?
- How to confront or addressing those issues?
- Beliefs, myths or personal perspectives framing the narratives?
- Expectations of funding agencies?
- Sources of moral support?
- Collaborations?
- What do you imagine could go wrong?

## Sample Discussion Questions (2)

- First involvement in nanotechnology?
- Ultimately hoping to accomplish?
- Elements of your research most worrisome?
- Still hope to learn?
- What is a surprise? Your funding sources?
- Why do you do what you do as an investigator?

## Sample Discussion Questions (3)

- What ethical factors are part of your work?
- Beliefs about the existence of a human soul?
- Thoughts about Eric Drexler's ideas?
- The best outcome from your research?
- The worst?
- Religious orientation or upbringing, if any?
- Sources of faith, hope, motivation, belief?

# Findings

- Tension between the importance of nanoscale research as practical and applicable versus scientific research for its own sake.
  - Aggravated by political, governmental, academic, and other institutional dynamics.
- Quandary over the role of ethics in nanoscale science and technology.
  - How and in what direction should nanoscale science should proceed?
  - What determines that direction, in terms of its moral/ethical implications?

# Three Dimensions of Nanoethics

First: Law and rule governed apparent, explicit, commonly held, and widely accepted assertions and claims.

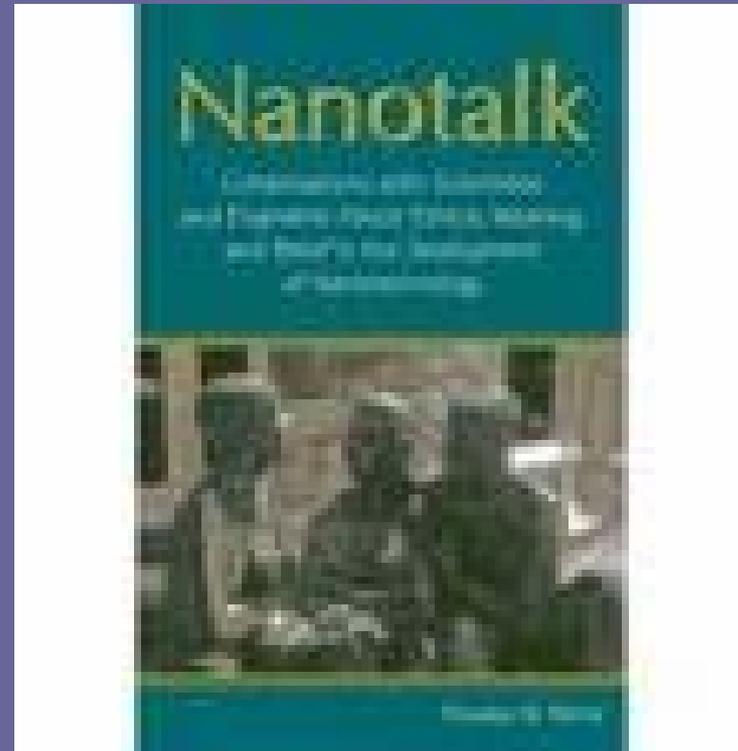
Second: Discourse based moral claims that are competitive, negotiable and subject to change.

Third: Seeks meta-ethical understandings through myth, symbol, metaphor.

# Research Outcome

## NanoTalk:

Conversations with  
Scientists and  
Engineers about  
Ethics, Meaning  
and Belief in the  
Development of  
Nanotechnology



Lawrence Erlbaum Press, inc.  
2004

# Study Conclusion

- Narrative is an indispensable device for formulation of theory about scientists perspectives regarding the moral and social implications of nanotechnology.
- However, alternative pedagogies are necessary to fully explore and develop a working ethical framework for analysis of nanotechnology

# Nanotechnology and the Moral Imagination

Writing of Science Fiction short stories by principal investigators and their graduate students as:

- Data for analysis and study
- Resource for teaching and discourse

# Continuing Research Question

How to actively  
engage the moral  
imagination  
towards the  
conscientious  
pursuit of a  
profoundly  
technological  
future?

