The Past, Present, and Future (!) of Science Communication Research

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Is this science communication?

- Grant proposals
- Lab/Field
  - Meetings
  - Preprints
- Formal paper
- Textbooks
- Policy documents, etc.

Media (web, TV magazines, radio newspapers, blogs, Twitter, books, etc.)
Scientific American

IT CURES AS NATURE CURES

The Washington Post

‘The Eagle Has Landed’—Two Men Walk on the Moon

Moon Walk Yields Data for Science

Squared Away and in Good Shape...
MAN IN A CHEMICAL WORLD

A BRIEF HISTORY OF TIME
FROM THE BIG BANG TO BLACK HOLES

STEPHEN W. HAWKING
WITH AN INTRODUCTION BY CARL SAGAN

ASIMOV ON PHYSICS

Asimov's SCIENCE FICTION

ASIMOV FOUNDATION

The Caravan from Troon

Longitude

The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time

DAVA SOBEL
New Exploratorium at Pier 15 - View from the Embarcadero
Photo Courtesy of ZUM | zumllc.com
THE DAY AFTER TOMORROW
IN THEATRES WORLDWIDE 28 MAY 2004
WHERE WILL YOU BE?
Issues in PCST, 1

Defining “it,” whatever “it” is, before we can do research

- Science literacy
- Public understanding of S&T
- Public awareness of S&T
- Public engagement in S&T
- Public communication of S&T
- Culture scientifique
- Apropiación social de la ciencia
- Etc.
What is the topic?

- Basic information/education about S&T
- Breaking news about S&T
- Information about social/political issues involving S&T
- Entertainment *using* S&T
  » Or *using* entertainment for the first three items on the page?
Issues in PCST, 3

- Understanding audience needs and interests
  - Information, education, and entertainment
  - People focus or science focus?
Issues in PCST, 4

◆ Institutional needs
  – Media (journalism): attract audience, sell ads
  – Media (entertainment): attract audience, sell tickets
  – Museums: attract audience, sell admissions
  – Scientists: recruit young people, get money from government

[Notice the pattern?]
What’s missing?
What’s missing?
## The past and (almost) present of research

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Authors</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>Early studies begin</td>
<td>Dietz (1937)</td>
<td>Social media studies belong here?</td>
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<tr>
<td>1950s</td>
<td>Davis (1953)</td>
<td>Kroghbaum (1949)</td>
<td>Feinerman (1950)</td>
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<td>Pre-1940</td>
<td>PCST</td>
<td>Hist Sci</td>
<td>SSS</td>
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Major categories of literature

- Public comm of S&T (PCST)
- History of science
- Social studies of science
- Science education
- Science journalism
- Science museums
- Visitor studies
- Risk communication
- Environmental, health, citizen science, etc.
History of science

- Public context for development of systematic research in 19th century
- Public responses to science issues in 20th century
- Many cases of scientists interacting with publics as scientists sought resources and authority
Social studies of science

- Science as public knowledge
- Mechanisms of public display to create knowledge
- Political uses of knowledge display; public knowledges vs. expert knowledge
- Acquisition of authority by new groups (citizen science, responsible research and innovation); Shaping of research by demands of public science (medialization)
Science education

◆ 1958: 1st definition of science literacy
◆ Occasional attempts to define
◆ Since 2000s: Adding “informal science education” to educational research
◆ “Learning science in informal environments”
Science journalism

- Institutional contexts and forces
  - Differences between scientists and journalists
- Distribution of topics: change over time
- Accuracy
  - Sins of omission rather than commission
- Creation and training of (science) journalists
  - Identification with scientific community
It's okay, Pluto. I'm not a Planet either.
Science museums

- Eternal tension between research and education
- Relation of knowledge display to knowledge production
- Changing audiences
Visitor studies

- Free choice
- Importance of families/groups
- Interactivity
- Attention to social diversity
Risk communication

- Psychological components: trust, fear/dread, knowledge
- Social amplification and attenuation of risk
- In case you missed it: Trust!
Other: Environmental comm, health comm, citizen science

- Political context matters
- Behavior change instead of knowledge and attitude change
- Learning by doing – both learning science and learning politics
PCST: Recurring themes, 1

- Recording what exists
  - Needed for action
  - Relationship to attitudes and emotions
  - Mechanisms and contexts for learning

- Institutions and people for PCST
  - Their needs and goals
  - Creating and training them

- Interactivity, dialogue
PCST: Recurring themes, 2

- Role of public communication in production of reliable knowledge
- Public authority of expert knowledge
  - And resistance to delegation of expertise
- Trust
PCST: Recurring themes, 2

- Role of public communication in production of reliable knowledge
- Public authority of expert knowledge – And resistance to delegation of expertise
- Trust
Missing (mostly) themes

- **Collective knowledge**
  - Families, communities

- Role of politics and activism in both individual and collective knowledge

- Literary/narrative analysis

- Gender, class, race

*These exist in other literatures; we just haven't brought them in well*
Present and future (!)

- Listen to the others at this symposium!
- Integrate the themes, find others
- Future: Fill in the missing areas!

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