Public communication of science

Lecture: Physics 691
January 18, 2010
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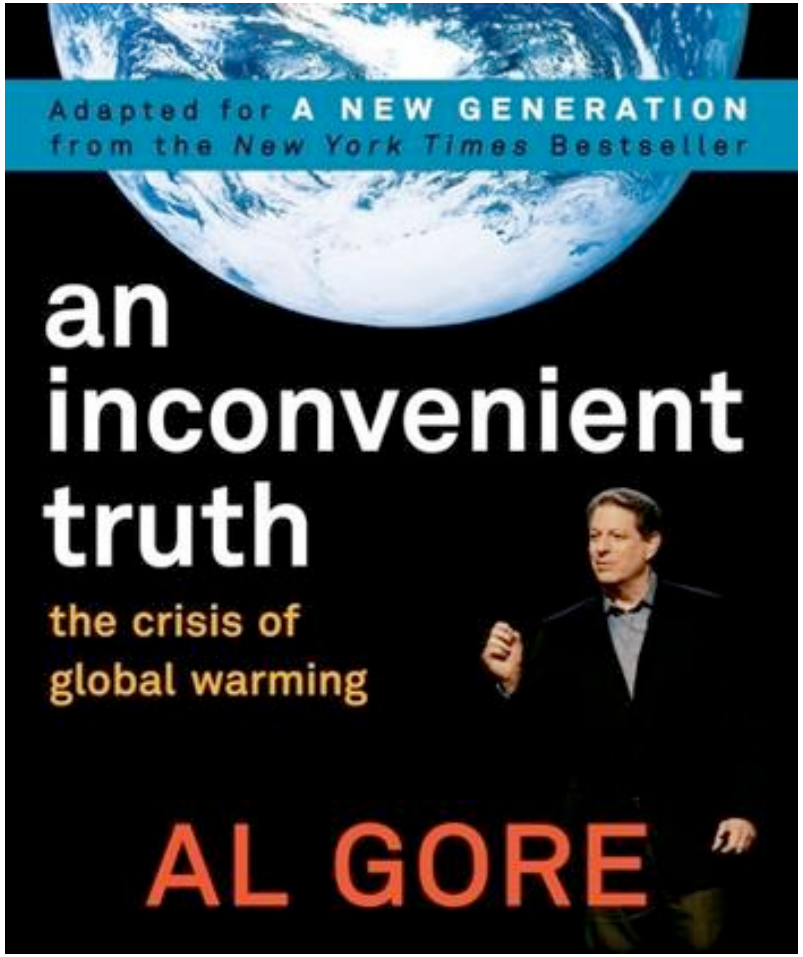
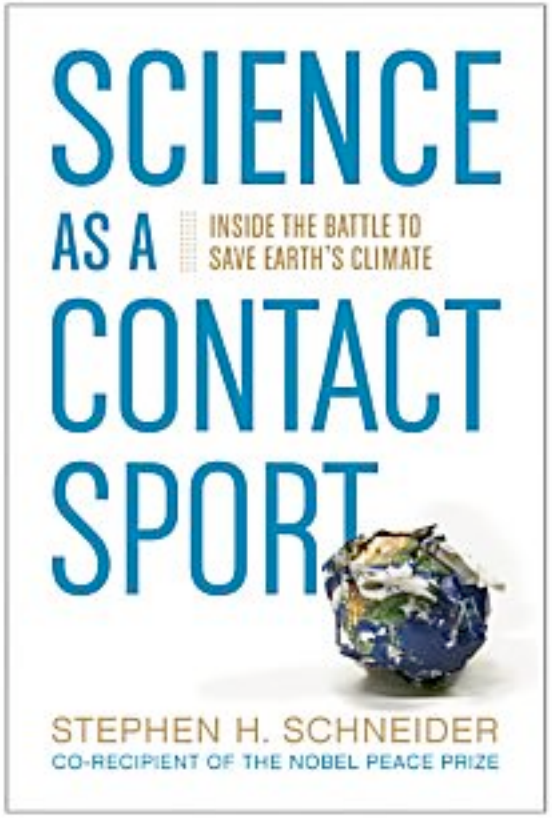

Adapted for A NEW GENERATION
from the New York Times Bestseller
an inconvenient truth
the crisis of global warming
AL GORE


SCIENCE AS A CONTACT SPORT
INSIDE THE BATTLE TO SAVE EARTH'S CLIMATE
STEPHEN H. SCHNEIDER
CO-RECIPIENT OF THE NOBEL PEACE PRIZE

“Deficit” or “Diffusion” Model Science Communication

SENDER (scientist)

MESSAGE

RECEIVER (public)

(Also known as: Shannon-Weaver or Transmission Model of Communication)

Core Assumptions

Public is passive – ignorance of / hostility to science can be counteracted by more information;

Science communication is linear, one-way process;

Communication is concerned solely with transfer of knowledge;

Knowledge is transferable without transformation / translation.

Changing social contract between science and society.

Activism
Mission Statement
Inside the Pint
Cage Free Eggs
Do the World a Flavor
Dairy
Fair Trade
Greyston
More About Milk
Environmental
Peace & Justice
Flavors

Cow Cloning

We're lifting the lid on CLONING!

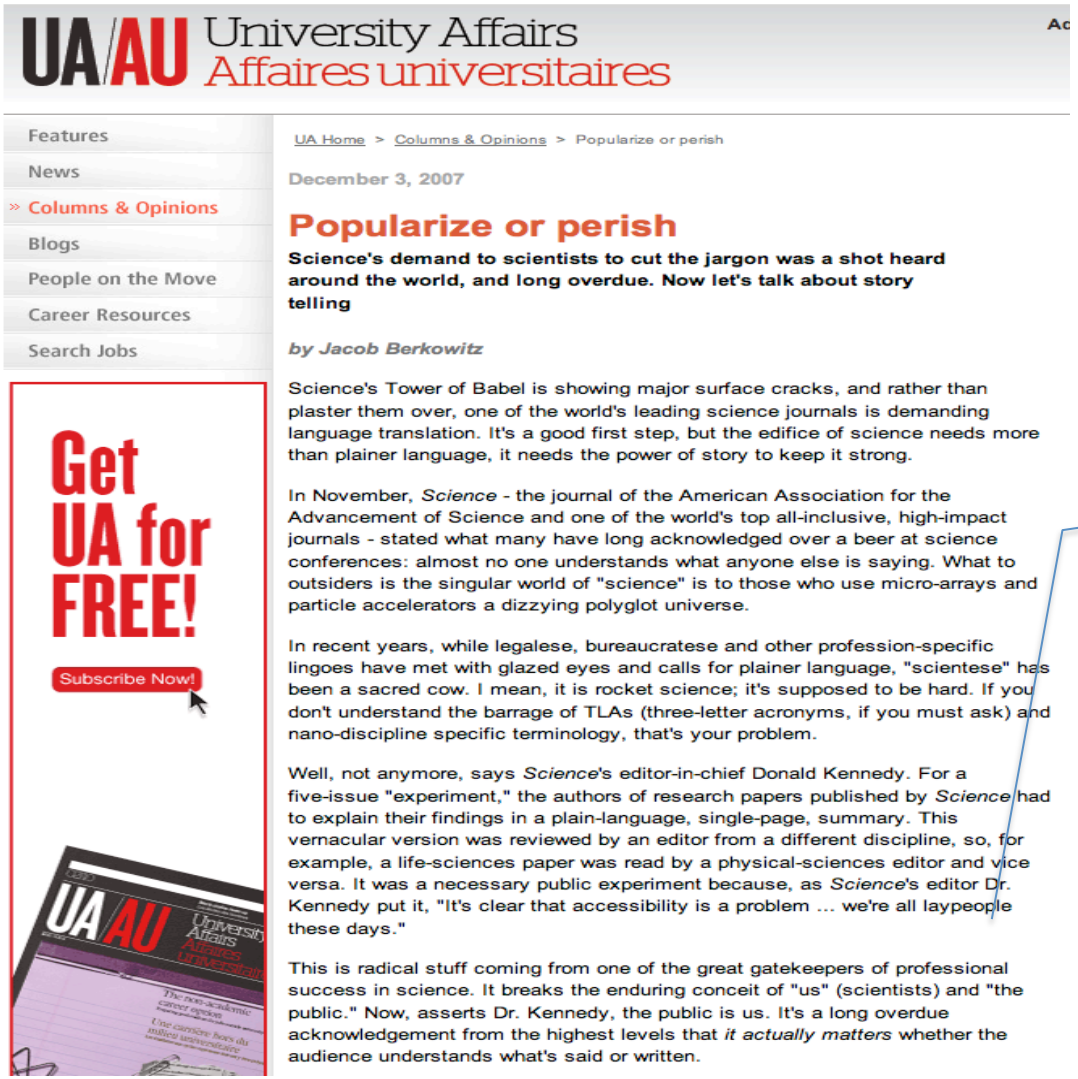
CYCLONEdairy
Perfect Cows. Perfect Milk.

April Fools! Ben & Jerry's launched a fictitious dairy company called "Cyclone Dairy" – selling milk made from 100% cloned cows in March 2009. CyClone Dairy isn't real, but it could be! Did you know that in January 2008, the U.S Food and Drug Administration declared milk and meat from cloned animals safe for human consumption, allowing cloned food products to enter the U.S. food supply?

We believe you should have the right to choose which foods you eat – and not to eat cloned foods if you don't want to. And that's why Ben & Jerry's believes we need a national clone tracking system, so people and companies can know where their food is coming from.

Please visit our friends at the Center for Food Safety to join our campaign to track clones and protect consumer choice.

Push to Popularize



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December 3, 2007

Popularize or perish

Science's demand to scientists to cut the jargon was a shot heard around the world, and long overdue. Now let's talk about story telling

by Jacob Berkowitz

Science's Tower of Babel is showing major surface cracks, and rather than plaster them over, one of the world's leading science journals is demanding language translation. It's a good first step, but the edifice of science needs more than plainer language, it needs the power of story to keep it strong.

In November, *Science* - the journal of the American Association for the Advancement of Science and one of the world's top all-inclusive, high-impact journals - stated what many have long acknowledged over a beer at science conferences: almost no one understands what anyone else is saying. What to outsiders is the singular world of "science" is to those who use micro-arrays and particle accelerators a dizzying polyglot universe.

In recent years, while legalese, bureaucratese and other profession-specific lingoes have met with glazed eyes and calls for plainer language, "scientese" has been a sacred cow. I mean, it is rocket science; it's supposed to be hard. If you don't understand the barrage of TLAs (three-letter acronyms, if you must ask) and nano-discipline specific terminology, that's your problem.

Well, not anymore, says *Science*'s editor-in-chief Donald Kennedy. For a five-issue "experiment," the authors of research papers published by *Science* had to explain their findings in a plain-language, single-page, summary. This vernacular version was reviewed by an editor from a different discipline, so, for example, a life-sciences paper was read by a physical-sciences editor and vice versa. It was a necessary public experiment because, as *Science*'s editor Dr. Kennedy put it, "It's clear that accessibility is a problem ... we're all laypeople these days."

This is radical stuff coming from one of the great gatekeepers of professional success in science. It breaks the enduring conceit of "us" (scientists) and "the public." Now, asserts Dr. Kennedy, the public is us. It's a long overdue acknowledgement from the highest levels that *it actually matters* whether the audience understands what's said or written.

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“Not only can science speak to society, as it has done so successfully over the past two centuries, but society can now 'speak back' to science.”

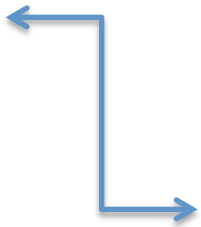
Michael Gibbons, 1999.

Gibbons, M. 1999. Science's new social contract with society. *Nature 402* (6761 Suppl): C81 - 4.

Shift in knowledge practices

“Reliable”

(Eg. Ziman,J. *Reliable Knowledge*. Cambridge, UK: Cambridge University Press, 1991)



“Socially robust”

(Nowotny, H. & Gibbons, M., *Rethinking science: Knowledge and the public in an age of uncertainty.* London: Polity Press, 2001)

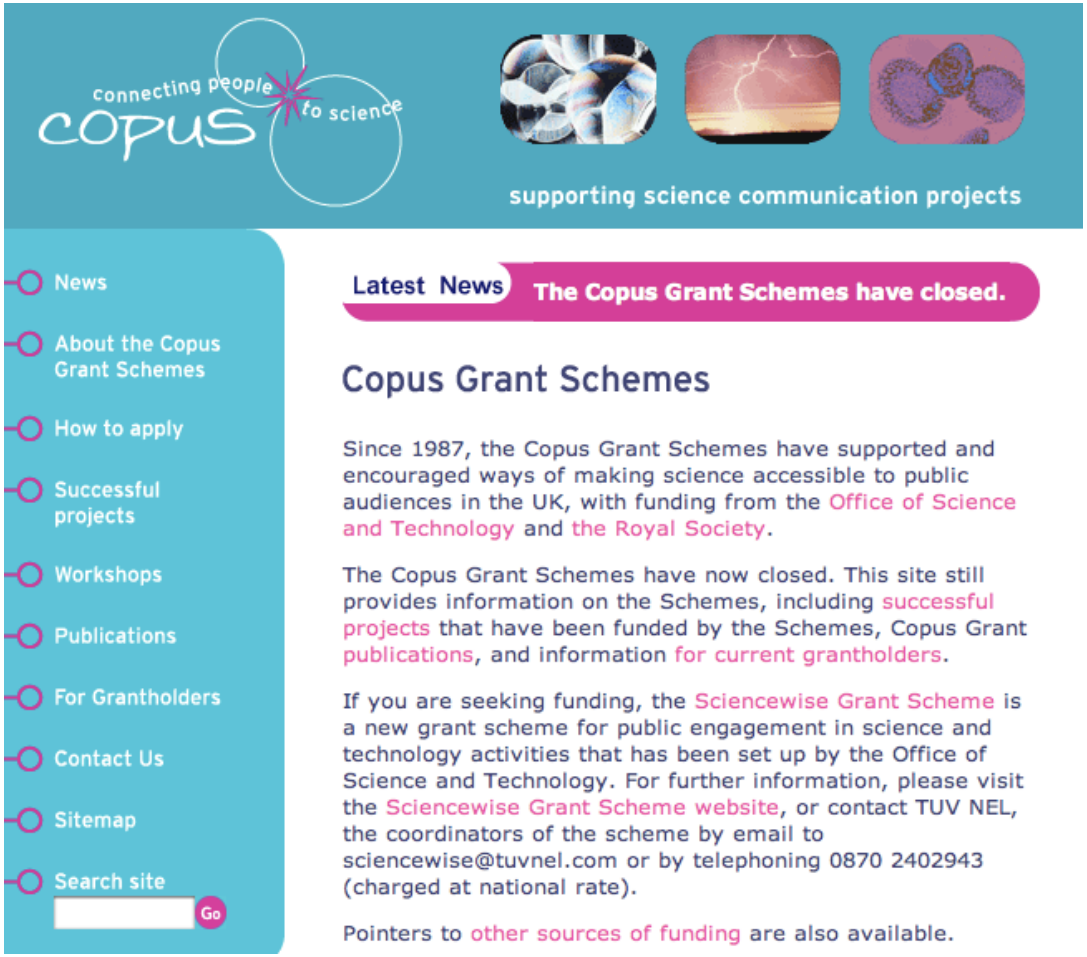
Models of public communication

MODEL	Emphasis	Versions	Aim	Context
Popularization	Content	Deficit	Educate Transfer knowledge	Scientism Technocracy
Dialogue	Context	Dialogue	Discuss implications of research	Social responsibility Culture
Knowledge co-production	Content and context	Participation	Setting research agendas	Civic society Democracy

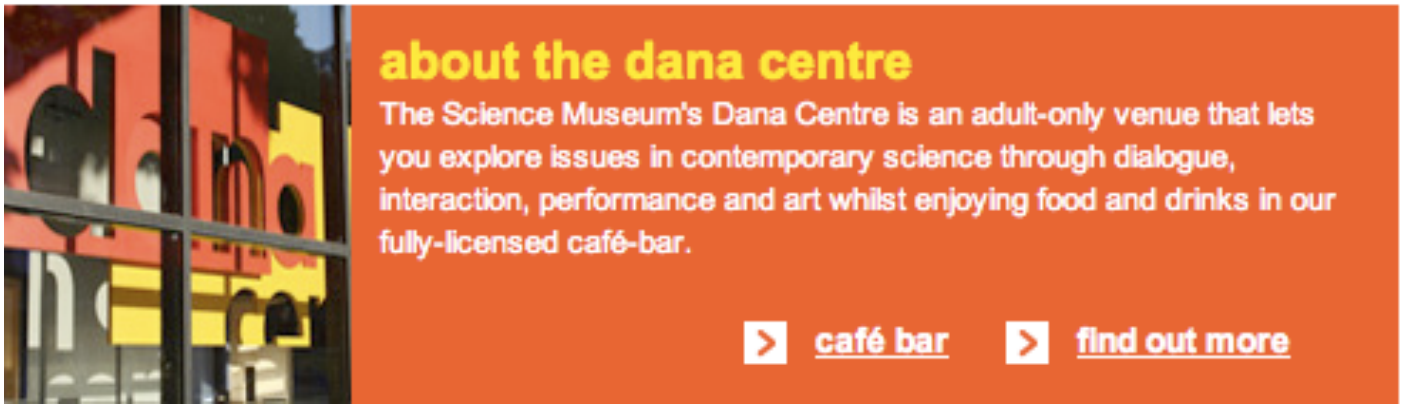
Modified from: Bucchi, M. "Of deficits, deviations and dialogues: Theories of public communication of science" In M. Bucchi and B. Trench. *Handbook of Public Communication of Science and Technology*, pp. 57 – 76. London and New York: Routledge, 2008.

Are we moving away from a deficit model?

Committee on Public Understanding of Science (UK)



Move to emphasis on dialogue and engagement



"New mood for dialogue"
House of Lords, 2000

In USA, deficit model still continues…

The **Coalition on the Public Understanding of Science** (COPUS) is a grassroots effort whose goal is to engage sectors of the public in science to increase their understanding of the nature of science and its value to society. A key objective of COPUS is to create new forums for communication and to develop new opportunities for engaging the public with science.

We invite your organization to join this coalition and to work with others in your community to engage the general public in dynamic ways that will make science more accessible, personally meaningful, and locally relevant.

YEAR of SCIENCE 2009

Explore. Empower. Engage…

Concluding remarks

- New social contract implies rethinking the relationship between science and society
- Scientists may need to re-examine the ‘agora’ (marketplace, public sphere) as a robust site to co-produce ‘socially robust’ knowledge