

Beate Elvebakk

Beate.elvebakk@toi.no

# **MNSES 9100: THE MODERN UNIVERSITY**

# SO FAR: WHAT IS SCIENCE?

- ✘ Verified knowledge? (positivism)
- ✘ Timeless method? (Popper)
- ✘ Rational approach? (Kuhn)
- ✘ Practice among others (Latour)
- ✘ Irrational authority (Feyerabend)
  
- ✘ The answer matters!

# SCIENCE IN SOCIETY?

---

- ✘ A source of truth/authority?
- ✘ An interested party/political actor?
- ✘ A source of revenue for states?
- ✘ A commercial actor?

# WHAT ARE *UNIVERSITIES* FOR?

- ✘ What do they contribute to society?
- ✘ What are their underlying values? (Do they – or should they – have any?)
- ✘ By what criteria should they and their employees be judged?

# TRADITIONAL TASK OF UNIVERSITIES

- ✘ Research (creating new knowledge)
- ✘ Teaching (educating)
- ✘ "Third task" – public outreach  
(informing society at large)

## **SOME UNIVERSITY HISTORY: 'ACADEMIC FREEDOM'**

---

University of Bologna adopted an academic charter, the Constitution Habita in 1155 or 1158, which guaranteed the right of a travelling scholar to unhindered passage in the interests of education. Today this is claimed as the origin of "academic freedom".

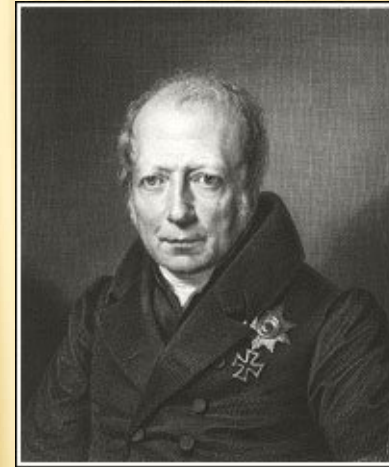
# WIKIPEDIA:

---

Academic freedom is the belief that the freedom of inquiry by students and faculty members is essential to the mission of the academy, and that scholars should have freedom to teach or communicate ideas or facts (including those that are inconvenient to external political groups or to authorities) without being targeted for repression, job loss, or imprisonment.

# HUMBOLDTIAN UNIVERSITY

Unity of research  
and teaching,  
freedom of  
teaching, and  
academic self-  
governance





# "THE IDEA OF THE UNIVERSITY"

- ✘ The function of the university was to advance knowledge by original and critical investigation, not just to transmit the legacy of the past or to teach skills. Teaching should be based on the disinterested search for truth, and students should participate, at however humble a level, in this search. Hence the classic view that the university was a 'community of scholars and students' engaged on a common task.

# NORWAY: ACT RELATING TO UNIVERSITIES AND UNIVERSITY COLLEGES (2005)

- ✘ (1) Universities or university colleges may not be instructed regarding
  - ✘ a) the academic content of their teaching and the content of research or artistic or scientific development work.
  - ✘ b) individual appointments.
- ✘ (2) Institutions subject to this Act shall be entitled to design their own academic and value-related bases within the frameworks laid down in or pursuant to statutes

# WHY THIS POSITION?

---

- ✘ Because scientists pursue the truth? And truth is a higher value that should be promoted?
  - + How do we recognize truth?
- ✘ Human welfare is important - knowledge is useful, and we cannot tell what leads to novel breakthroughs?
  - + Nuclear weapons research?

# MODERN UNIVERSITIES?

»Universities have the potential to be crucial drivers of Europe's ambition to be the world's leading knowledge-based economy...

At the same time, the need for change if they are to meet their potential is clear. A key element within the Modernisation Agenda for Universities is that universities should develop structured partnerships with the world of enterprise in order to become significant players in the economy, able to respond better and faster to the demands of the market and to develop partnerships which harness scientific and technological knowledge«.

European Commission (2009)

# ”KNOWLEDGE ECONOMY”

---

- ✘ Increasing focus on knowledge as source of economic growth and competitiveness
- ✘ Science managed as source of profit for states – through deciding what kinds of science should be carried out (research programmes, industry collaboration...), or making sure science is used in profitable way (patenting, setting up companies), or ensuring that research is cost-effective (evaluations, incentive structures, management methods...)

# MODE 2

---

- ✘ *The new production of knowledge: the dynamics of science and research in contemporary societies.* (Gibbons et al, 1994)
- ✘ a new form of knowledge production started emerging from the mid 20th century which is context-driven, problem-focused and interdisciplinary
- ✘ multidisciplinary teams brought together for short periods of time to work on specific problems in the real world

# TRIPLE HELIX

---

- ✘ Etzkowitz & Leydesdorff (2000)
- ✘ Model of scientific work today, performed by a triple helix of the nation state, academia and industry

# BOTH:

---

- ✘ The new models can be seen as outcome of convergence of two (related) forces:
  - 1) Demand for accountability/reflexivity (ethics/economy)
  - 2) Belief in knowledge as basis of economic growth

Why would a society want a university? The answer can no longer be taken for granted.



# VALUE TO SOCIETY

---

- ✘ British higher education institutions contribute 45 billion GBP to the national economy (Universities UK, 2006)
- ✘ Australian Universities contribute 22 billion AUD
- ✘ Harvard says its economic impact is more than USD 3.4 billion

Schwartz, 20006

# MERTONIAN NORMS (CUDOS)

- × **Communalism:** scientific knowledge should be shared as widely and quickly as possible
- × **Universalism:** independent of the personal or cultural status of the scientist
- × **Disinterestedness:** scientific results should be free from personal or corporate biases
- × **Originality:** Research should be novel
- × **Scepticism:** Results should be vigorously tested

# COULD NEW STANDARDS THREATEN NORMS OF SCIENCE?

---

- ✘ Commercial pressure
- ✘ Publication pressure
- ✘ Limited encouragement to engage in teaching and public outreach

# THREATS TO THE NORMS OF SCIENCE

- ✘ In a recent survey of 2200 medical scientists, 410 admitted to holding back publication of their research results. They wanted to ensure that they, and their commercial sponsors, had time to safeguard their property rights (Newman, Couturier and Scurry, 2004).
- ✘ A Stanford University study found that 98% of the research papers sponsored by drug companies report that the companies' drugs are effective. In contrast, only 79% of non-company-sponsored research papers report positive results (Washburn, 2005).

Schwartz, 2006

- 
- ✘ Studies funded by a pharmaceutical company have been found to be four times more likely to give results favourable to the company than independent studies (Lexchin, et al, 2003)

Click to **LOOK INSIDE!**



# Bad Pharma™

**Ben Goldacre**  
Bestselling author of *Bad Science*

How drug companies  
mislead doctors and  
harm patients

304 pages

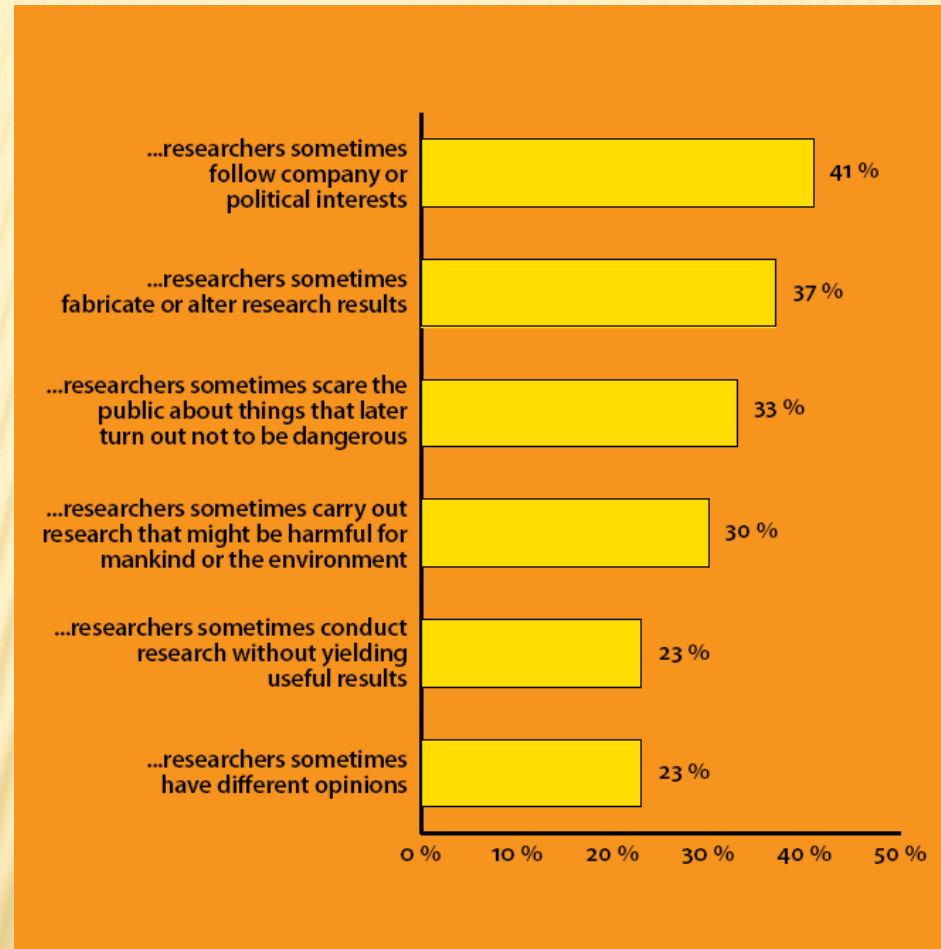


## EUROPEAN CITIZENS HAVE LOST TRUST IN SCIENCE DUE TO RESEARCHERS' DEPENDENCE ON INDUSTRY FUNDING

---

- ✘ Eurobarometer 2010
- ✘ *Close to three in five Europeans (58%) agree that “we can no longer trust scientists to tell the truth about controversial scientific and technological issues because they depend more and more on money from industry”*
- ✘ *Very few countries have less than 50% of respondents who agree that they cannot trust scientists who depend on money from industry*

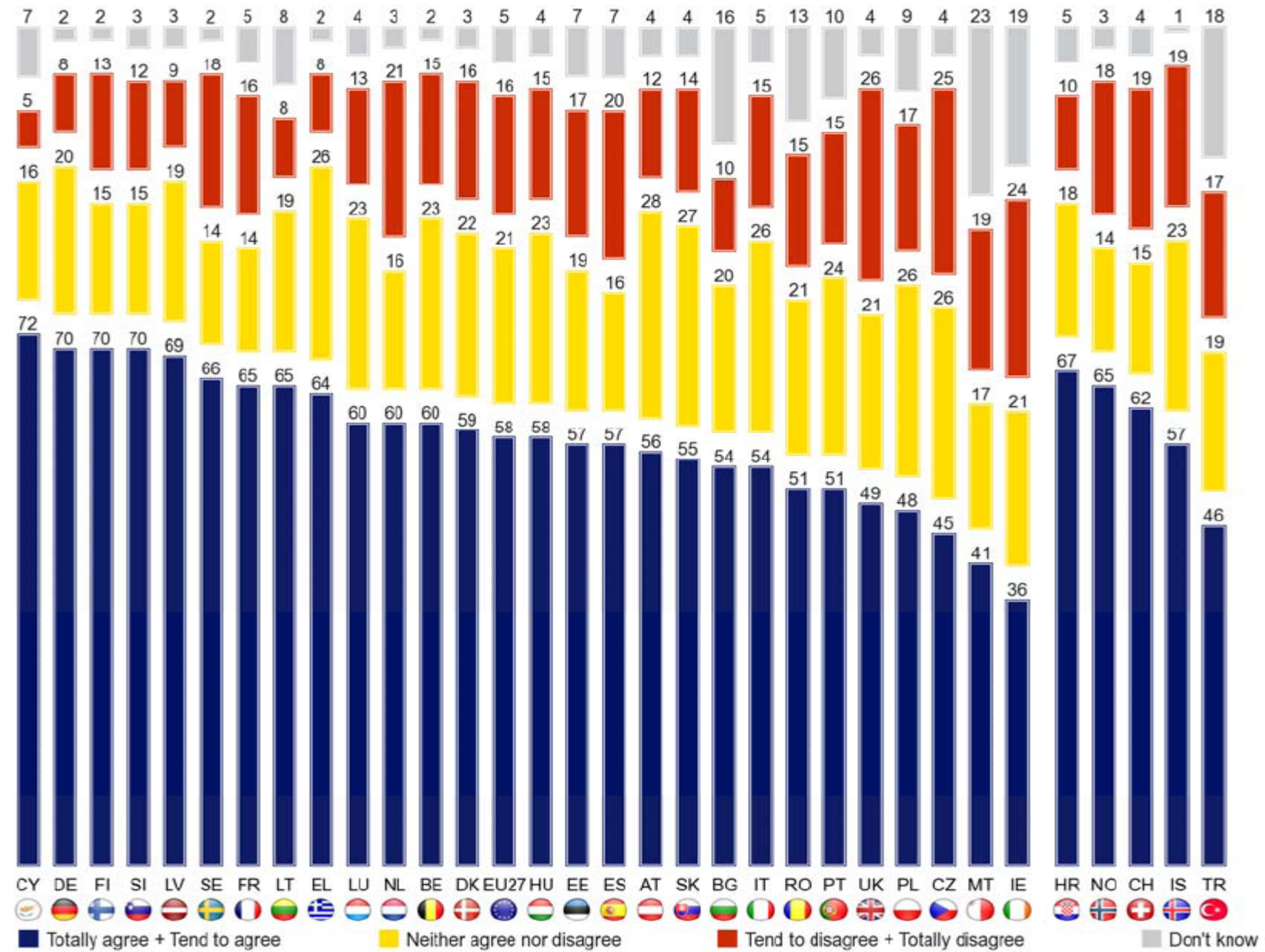
# FACTORS THAT “TO A LARGE EXTENT” INFLUENCE CITIZENS’ LACK OF TRUST IN SCIENCE





QC8.3. To what extent do you agree with the following statements?

We can no longer trust scientists to tell the truth about controversial scientific and technological issues because they depend more and more on money from industry



# PEER REVIEW – THE BULWARK AGAINST BAD RESEARCH?

---

- ✘ Typical response when science is challenged, is to refer to the scientific publication process
- ✘ Published research has been through painstaking quality-control, and can be trusted
- ✘ Peer reviewed publications are “the gold standard” of science.

# PUBLICATION PRESSURE

---

- × Double publishing
- × Self plagiarism
- × “minimal publishable unit.”
- × Unfinished work
- × Ghostwriting

# AUSTRALASIAN JOURNAL OF BONE & JOINT MEDICINE

---

- ✘ *Australasian Journal of Bone & Joint Medicine* was a periodical presented in the style of a scientific journal, published by Elsevier but established and funded by pharmaceutical company Merck. Published between 2002 and 2005. According to The Scientist:
- ✘ Merck paid an undisclosed sum to Elsevier to produce several volumes of a publication that had the look of a peer-reviewed medical journal, but contained only reprinted or summarized articles—most of which presented data favorable to Merck products—that appeared to act solely as marketing tools with no disclosure of company sponsorship.

# IS SCIENCE TO BENEFIT SOCIETY?

- ✘ Although academic freedom is an ideal, it is obvious that states fund universities for a reason, and the knowledge created in universities is frequently seen as a kind of public good.
- ✘ But is that how it is working today?

# JONAS SALK – POLIO VACCINE

- ✘ In 1955, Jonas Salk launched a human trial of the polio vaccine he had developed over years of research.
- ✘ It was hugely successful, and Salk became famous.
- ✘ But he did not become rich, and neither did the University of Pittsburgh where he worked.
- ✘ Instead, they licensed the vaccine to many companies, to enable the vaccine to become widely disseminated .



DEVELOPER,  
POLIO VACCINE



“RISKS, I like to say,  
always pay off. You  
learn what to do or  
what not to do.”

- Inducted: 1976 -

# FOR THE DISCUSSION

---

- ✘ The first person listed in each group is spokesperson – and will report on your conclusions, but others may fill in
- ✘ Take notes from the discussion
- ✘ Answer all the questions

# DISCUSSION TOPICS

---

- ✘ Do university employees today enjoy academic freedom? Should they?
- ✘ Do you think universities have, or should have values? Which ones?
- ✘ Do you think being a scientist implies other (moral) responsibilities than being a private citizen?



# GROUP DISCUSSIONS

- Group 1                    205
- Group 2                    207
- Group 3                    208
- Group 4                    230
- Group 5                    Aud front
- Group 6                    Aud back

# WHO IS TO BENEFIT?

---

- ✘ Only 10 % of the world health burden receives 90 % of total biomedical research funding, according to the Global Forum for Health Research
- ✘ Diseases primarily found in the developing world receive very little funding.

# NEGLECTED DISEASES

---

- ✘ Chagas disease (Latin America)
  - + 21,000 deaths per year
- ✘ Trypanosomiasis (300 000 cases every year in Africa)
  - + About 48,000 people died of it in 2008
- ✘ Magnesium's position as best treatment of eclampsia only established in 2002 (used from 1906), because no commercial interest in magnesium, and fatalities mostly in developing world.

# A "FAIR SHARE" OF RESEARCH?

- ✘ Flory and Kitcher (2007) calculated the "fair share" of medical research that a disease should receive by dividing the total estimated global research budget by the proportion global of deaths from disease caused by a particular disease

# A FAIR SHARE

---

- ✘ Malaria: 1,7 billion \$                      85 million \$
- ✘ Tuberculosis 3,5 billion \$                      33 million \$
- ✘ Respiratory infection 4 billion \$                      100 million\$
- ✘ Diarrhoeal diseases 7 billion \$                      \$100 million

# FLORY AND KITCHER

---

- ✘ "In becoming a scientist someone takes on a new role, and that role brings obligations . To fulfill the role, scientists should devote their energies toward achieving the goals of the branch of science in which they work."

# AN OBLIGATION FOR THE INDIVIDUAL SCIENTIST?

---

- ✘ "It's a matter of historical accident that some people live in societies with the resources to commit to scientific research, and, we suggest, no ideal for the direction of scientific inquiry should reflect such accidents."
- ✘ "Hence, in the presence of the 10/90 gap, there's ample reason to think that scientific research is not promoting its proper goal. In consequence, scientists have an obligation to do what they can to remedy the situation." (Flory and Kitcher, 2007)

# EVALUATING SUCCESS IN SCIENCE

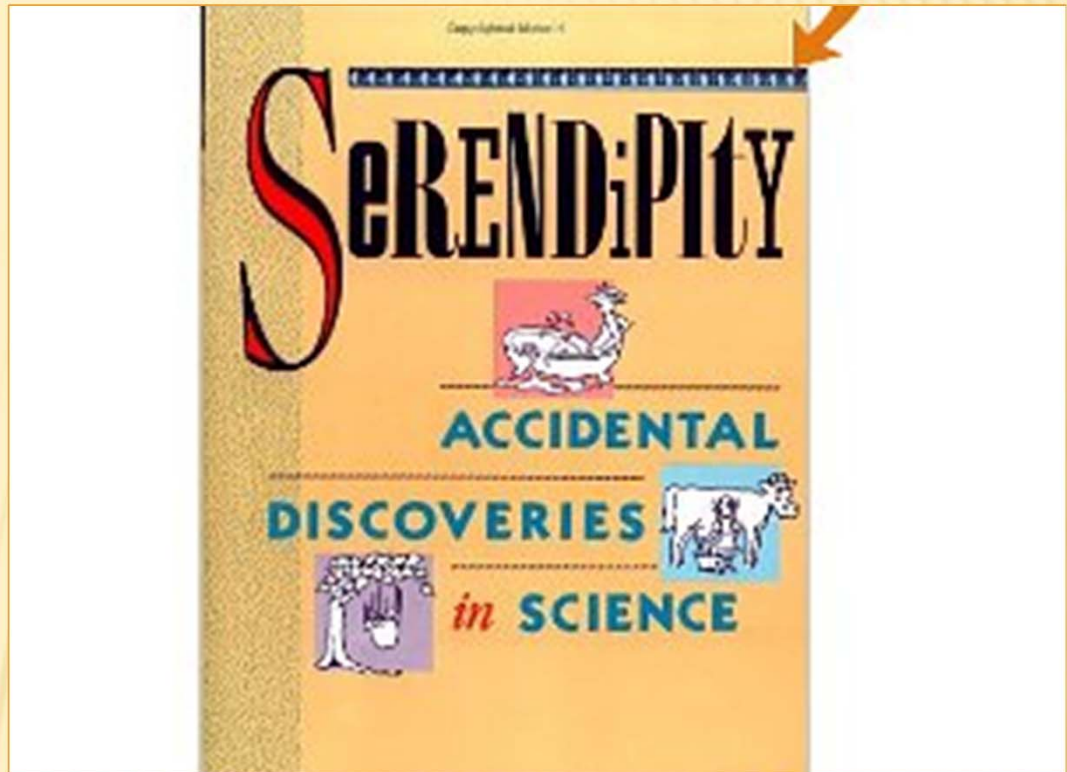
## Universities as businesses

- ✘ Profit (industry collaboration)
- ✘ Publications (levels)
- ✘ Patents
- ✘ Number of students

## Universities as "Ivory Towers"

- ✘ Quality of research
- ✘ Awakening minds
- ✘ Independent opinion – freedom of speech ("formidlingsutvalg")





PLANS OR LUCK?

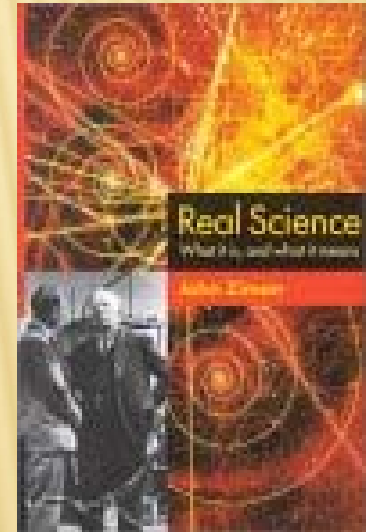
# PUBLIC OUTREACH

---

- ✘ Should all scientists feel an obligation to communicate with the public?
- ✘ Should they communicate even though results are distorted by journalists, or get misconstrued by readers?
- ✘ What should they communicate?
- ✘ Should they communicate even if they may risk being slandered or threatened?

# PLACE: THE NEW NORMS (ZIMAN)

- ✘ Proprietary – not communal
- ✘ Local – researchers concentrate on local technical problems, which may not contribute to general understanding
- ✘ Authority – vested in a managerial hierarchy, not the individual researcher
- ✘ Commissioned – to solve specific problems
- ✘ Expert – rather than a creative person



John Ziman: Real Science. CUP (2000)