

Recognising Traditional Knowledge: Scientific Threat or Ethical Treaty?

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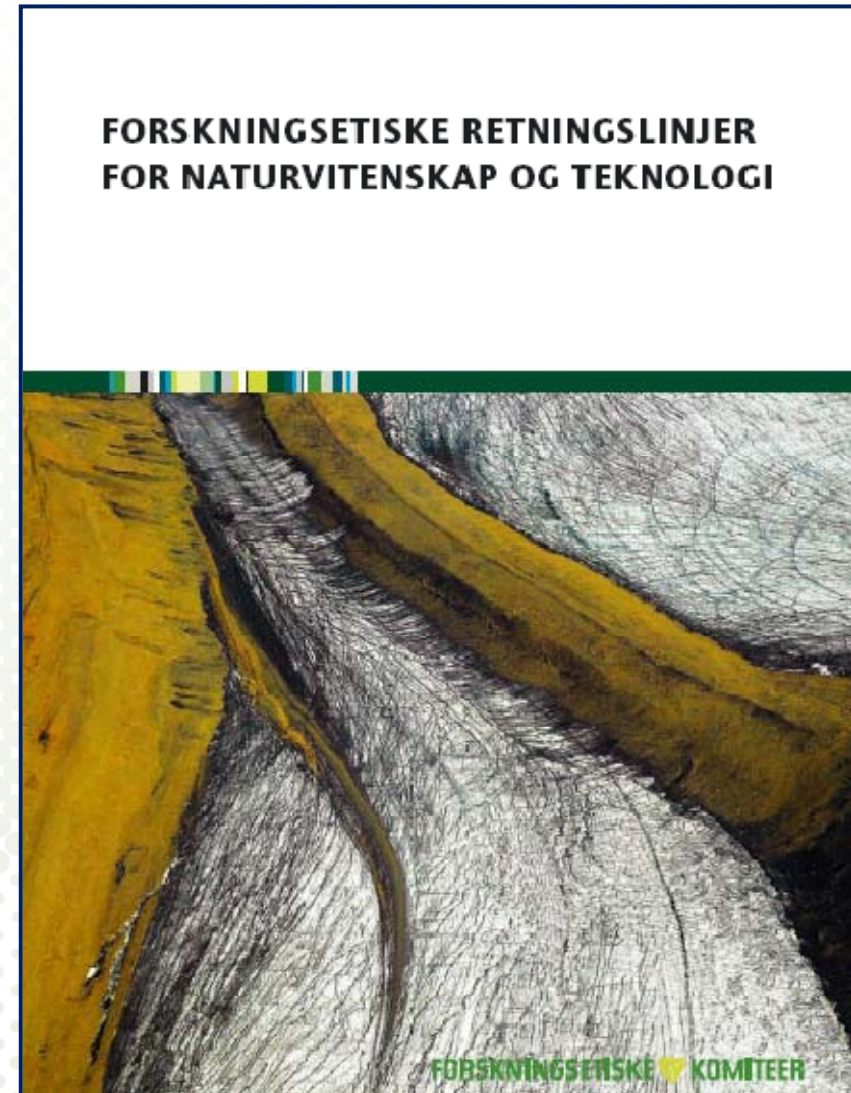


Research Ethics Guidelines (NENT, 2007)

17. The researcher must whenever natural seek to incorporate and respect alternative sources of knowledge, such as traditional knowledge.

A study at Oslo University suggested that academic staff found this guideline particularly problematic

Good Research Practice
(Kalleberg, 2009)



Relationship with traditional and alternative sources of knowledge

- Traditional knowledge is a cumulative set of knowledge, skills, practices and descriptions that have been preserved and developed by peoples experienced in interacting with nature.
- It is a set of perceptions that is contingent upon the given location and situation, based on the personal experiences of a social group with relatively homogeneous interests and life situations, and conveyed through traditions and personal contact, where the informants' credibility and personal background form the critical threshold for acceptance.
- Traditional knowledge among indigenous peoples is of this type, but we find such traditional knowledge in every society. Even though these forms of knowledge do not meet the usual standards for scientific knowledge, they can serve as a useful supplement when scientific or technological knowledge is applied in practice. The importance of traditional systems of knowledge has been increasingly recognized in scientific circles.

Article 26 of the Declaration on Science and the Use of Scientific Knowledge (World Conference on Science 2000):

" that traditional and local knowledge systems, as dynamic expressions of perceiving and understanding the world, can make, and historically have made, a valuable contribution to science and technology, and that there is a need to preserve, protect, research and promote this cultural heritage and empirical knowledge" .

17. The researcher must whenever natural seek to incorporate and respect alternative sources of knowledge, such as traditional knowledge.

- Much of today's knowledge is based on lay knowledge. Local knowledge, since it is based upon lengthy experience, can in many cases expand on and improve research results. It is therefore important that researchers seek to incorporate such knowledge in applied research.
- This entails that:
 - When scientific knowledge or technology is applied, the researcher should be open to the potential use of relevant traditional knowledge.
 - Researchers who directly use or base their research on sources from traditional knowledge, which is often acquired through generations, are duty bound to respect both the economic and cultural value of such knowledge. In the degree that such research creates an economic profit, a fair distribution of this profit should benefit these sources of knowledge.

18. The researcher should whenever natural seek to use participatory methods.

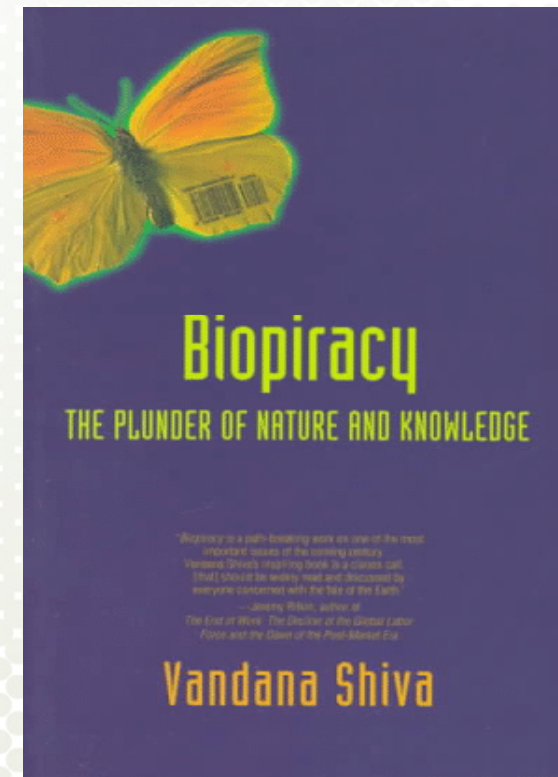
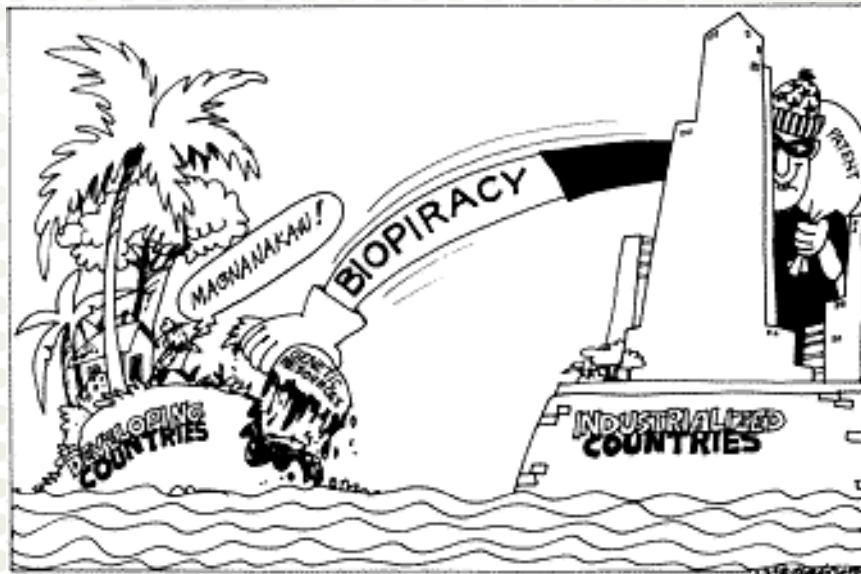
- Participatory methods can enable a more thorough understanding of the subject matter and add knowledge that would otherwise have been inaccessible to outside parties. Many elements of applied science depend upon knowledge being incorporated from and accommodated for special user groups.
- This entails that:
 - Researchers engage in an open dialogue with users.
 - Researchers use suitable methods to ensure the participation of concerned parties.

“Briefing Pamphlet”: Issues

- Traditional knowledge and intellectual property rights
- Traditional knowledge and participatory methods
- Traditional knowledge and pseudoscience

Traditional Knowledge and Intellectual Property Rights

- Bioprospecting and Biopiracy
- 57% of the 150 most sold medicines in the USA have a natural biological component
- Ethno-medicine an important source of knowledge
- Who benefits?



Types of Intellectual Property Rights

- Patents
 - Trademarks
 - Design rights
 - Copyright
-
- Trade-related aspects of Intellectual Property Rights (TRIPs)
-
- A patent is a monopoly: it grants an exclusive right to commercial exploitation of an invention
 - Types of patents: Process patent, Product patent, Use patent



Arguments for intellectual property rights

- Enterprise deserves reward
- Promotes investment in research for the common good
- Incentive to research for the common good
- Leads to scientific and technological development
- Creates jobs



Arguments against Intellectual Property Rights

- Biopiracy/bioprospecting
- Intellectual protectionism?
- Reduced access to products for the poor (medicine, GM-crops)
- Research focused on needs of the rich
- Unfair advantage
- Ownership contrary to traditional and cultural heritage



Patent Examples

- US attempts to take out patents on Basmati rice (1997), Mexican yellow Enola beans (1999)
- Australian patent on Zimbabwe and Zambian cows (embryo sales: \$800 million/year)
- Univ. of Wisconsin patent on a "super sweet" protein from Gabon berries (\$ 1.4 billion)
- 1995 US and Japanese patents on Neem products (a tree in India used for centuries as a biopesticide and medicine). Overturned 2005.



Traditional Knowledge and Participatory Methods

- Importance of lay knowledge in decision making
- Recognised in a number of international agreements



Brian Wynne (1996), May the Sheep Safely Graze?

Rio Declaration 1992



Principle 10

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level.... States shall facilitate and encourage public awareness and participation by making information widely available....

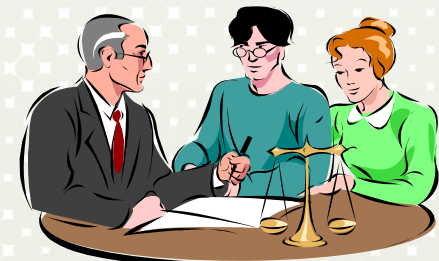
Aarhus Convention

The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters

Adopted June 1998, ratified October 2001,
www.unece.org/env/pp

Stakeholder Involvement

- Emphasis on dialogue (two-way communication, “bottom-up” approach, “deliberative democracy”)
- “Stakeholder” extended from experts, to include lay people and members of the public
- Procedures include both consultation and decision-making



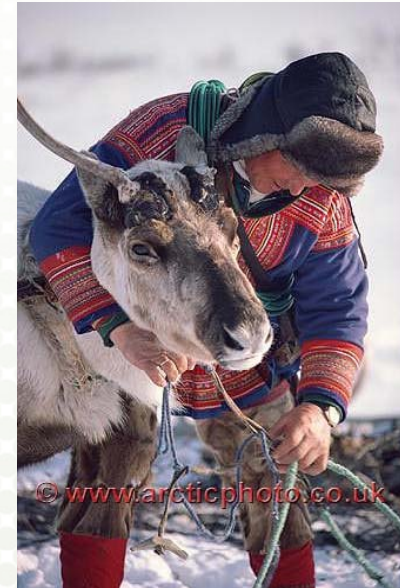
Criticisms: Public/Lay Participation Policy

- "..it is the job of those in power to take decisions necessary for the sound management of waste."
(UK Government's Select Committee on Science and Technology, 2002)
- "..environmental policy based on the public's conceptualisation of risk...fails to adequately protect fundamental human rights to health and liberty" *(Perhac, 1996, cited in Rowe and Frewer 2001)*



Criticism – Public Participation Processes

- Propaganda with no real influence
They exist “to legitimise agency decisions, defuse opposition, warn the agency of possible political obstacles and satisfy procedural and legal requirements” (Kraft and Clary, 1993).
- Premature public engagement (particularly when expert opinion is highly divided) can be counterproductive.



Nevertheless, recognition of:

- fundamental right of stakeholders to be involved in decisions that affect them
- more efficient decision-making



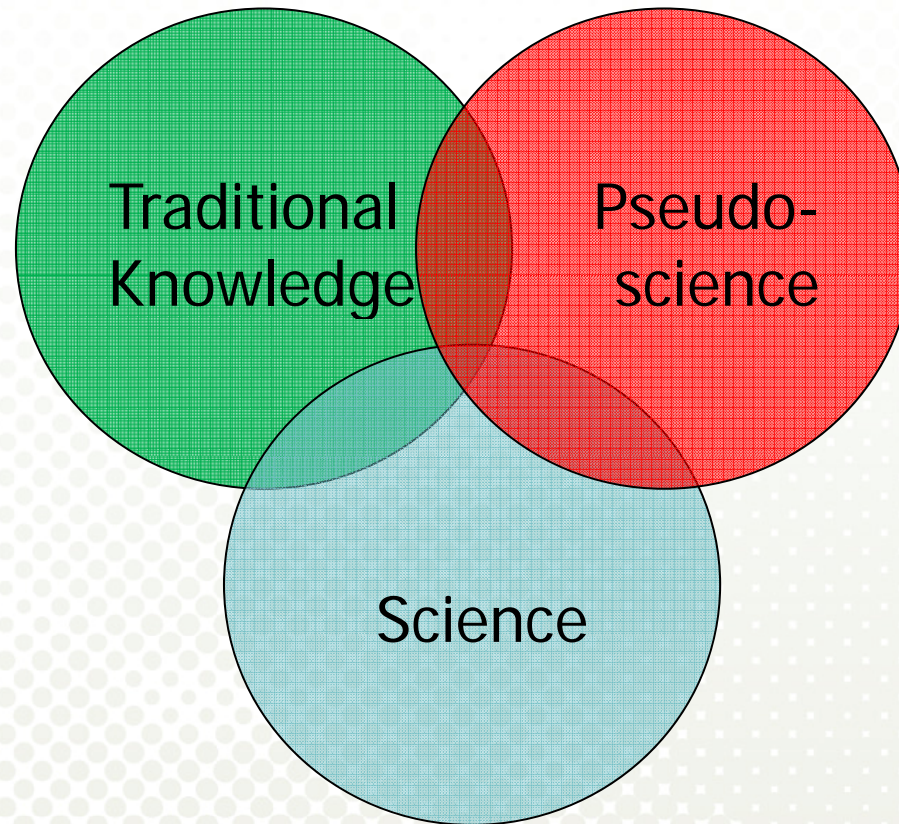
Traditional Knowledge and Pseudoscience

Why should we be concerned about pseudo-science? (Ziman, Kitcher, Lakatos, ++)

- Ethical and political implications
- Public's "misunderstanding" of science
- Public's preoccupation with the occult, paranormal, astrology
- Use of pseudoscience in marketing: "Detox"



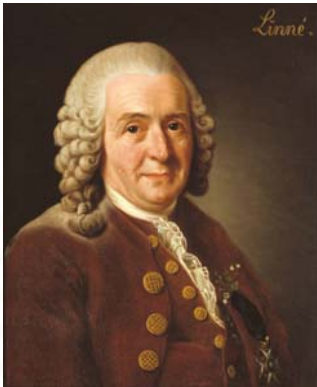
Traditional Knowledge and Pseudo Science



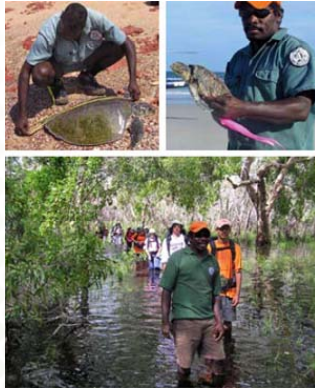
SCIENCE AND TRADITIONAL KNOWLEDGE *Report from the ICSU Study Group on Science and Traditional Knowledge.* (Fenstad et al. 2002)

Science, Pseudoscience and Traditional Knowledge (Føllesdal, 2002)

Traditional Knowledge and Science



Ethnobotany



Agro-ecology

Animal breeding



Traditional medicine

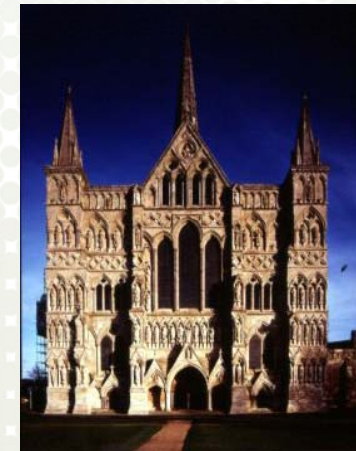
Biodiversity Management



Boat-building



Architecture



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Traditional Knowledge and Pseudo Science (ICSU, 2002)

- Sociological – pseudo science is in competition with a corresponding science; traditional knowledge is not in competition.
- Epistemological – both pseudoscience and traditional knowledge have less systematicity – lack statistical testing



Figure 1 The bizarre climax of the sensational Scopes trial occurred on the afternoon of 20 July 1925 when Clarence Darrow (left) questioned William Jennings Bryan (right) about the literal truth of the Bible. The Scopes trial remains the most famous event in the evolution-creationism controversy. Photograph courtesy of Bryan College.

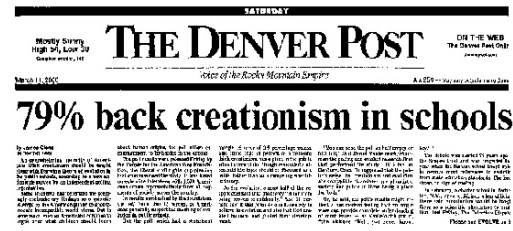


Figure 2 This front-page headline on the 11 March 2000 issue of The Denver Post announced Americans' continuing and overwhelming desire to have creationism taught in public schools.

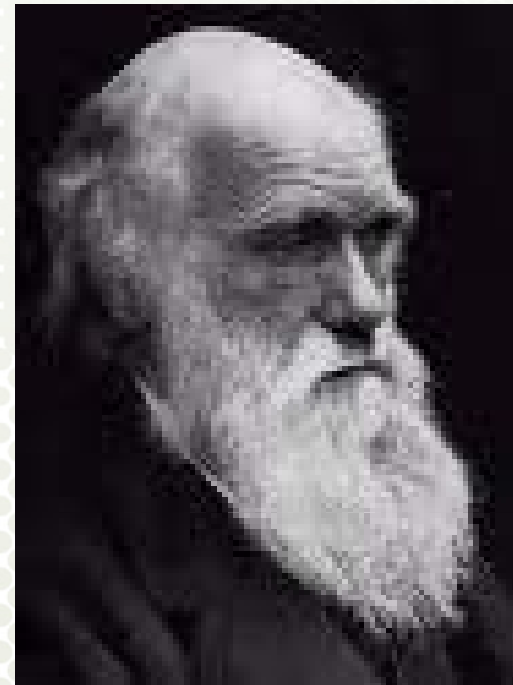
Decades after monkey trial, debate hasn't evolved much

Theory's detractors say 'popular revolt' under way page of the Houston Chronicle on 18 September 1999.

Even before he became a Christian, the former star in opposition of evolution.

That, ultimately, is the point that leading evolution opponents are making in a "popular revolt" in under way. The case of debate is moving to a level where the public is being well educated in Darwin's revolution against the sun. In doing so, the case is being made that the

Figure 3 Decades after the Scopes trial, the evolution-creationism debate rages on in the United States. This article appeared on the front page of the Houston Chronicle on 18 September 1999.



Astrology

- Zodiac established in 700 BC in Egypt, Chaldea
- Ptolemy (2 AD) *Tetrabiblos* and *Almagest*
- European Renaissance (14th-16th Century) – widespread rise in developments in arts
- Age of Enlightenment (17th – 18th century) – lost popularity
- Start of own renaissance in 1930's



Kepler

Thagard, 1978

1975 statement by 192 scientists and 19 Nobel prize winners

Called for the rejection of astrology, arguing it was a pseudo-science because:

- Astrology originated as part of a magical world view
- The planets are too distant for there to be any physical foundation for astrology
- Astrology is incapable of making precise predictions
- People believe it merely out of longing for comfort



Other criticisms of astrology

- Resists falsification
- Not rational (refusal to abandon theory – whatever the evidence)
- Non-progressive
- Non-critical
- Not “public knowledge”
- Not objective
- Can be replaced by a better theory (psychology, genetics, sociology)



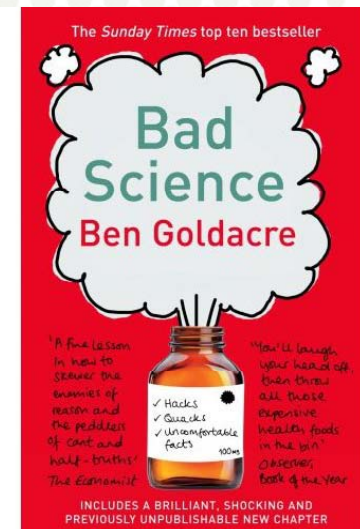
Traditional Knowledge and Alternative Knowledge "Technobabble": Brain Gym"

- Educational Kinesiology
- Used in UK schools and approved by DHE
- Based on "massaging brain buttons"



Hugh Charles Sparker

[Newsnight](#)



Other Pseudo-Sciences? ...or Alternative Knowledge?

- Homeopathy?
- Acupuncture?
- Crystal therapy?
- Faith healing?
- Paranormal?
- Extraterrestrials?
- Intelligent design?
- Climate Change?



Sammuel Hahnemann



www.timboucher.com

Issues

- Traditional knowledge and intellectual property rights
 - Traditional knowledge and participatory methods
 - Traditional knowledge and pseudoscience
-
- Selection of topics?
 - More – less??
 - Deeper – shallower??
-
- Writing primarily for scientists