



INTEGRATING SOCIAL AND BIOPHYSICAL RESEARCH

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The MRST Study*

[Undertaken in collaboration with James Baines of Taylor Baines Ltd]*

To gain insight into “the practical benefits resulting from collaboration between social scientists and nanotechnology researchers” in order to inform MRST Roadmap.

- ‘Nanotechnology’ taken broadly - included biotechnology

The study was part of a broader set of studies for MRST around collaborations between social scientists and physical scientists, and of multi-disciplinary integration in various science areas.

Study Methodology

Qualitative research - based on interviews with individual social scientists, nanoscientists, and biological scientists in NZ and the UK.

Looked at 3 cases of collaboration:

1. A collaboration between a social scientist and a materials nanoscientist - designed to explore each other's science perspective and disciplinary culture.
2. The integration of a full-time social scientist into the programme of a specialist nanoscience research centre in the UK.
3. A programme of social research to inform the direction for research on biological controls for animal pests in New Zealand.



The Main Benefits of Integration & Collaboration

- fosters the building of new networks
- creates opportunities for further collaborative work
- increases knowledge
- improves participants' capacity for cross-disciplinary communication
- provides insight into the broader social context of the science - including public viewpoints of the technologies
- leads to more reflexive research practice
- heightens awareness of disciplinary assumptions
- increases appreciation for different research methods
- produces outputs that are more and robust (especially socio-politically)
- Its fruitful in terms of capacity development, and the research outputs produced



The Main Challenges of Integration & Collaboration

- discipline-specific language
- differences of approach and methodology (eg qualitative and quantitative methods)
- understanding and appreciating the underlying philosophical assumptions of each other's science
- maintaining disciplinary autonomy (especially for SS working in a bio-physical science-focused institution)
- reaching an understanding of each others project roles
- maintaining an 'open mind'
- allowing enough time for a successful collaboration to develop



Lessons Learned & Advice Received

- incorporate social research at project design stage
- invest sufficient time in informal exploratory discussions
- investigate and contribute to the development of collaborative research models
- invest in monitoring of collaborative work (ie meta-research)
- recognise the value of cross-disciplinary teams
- explicitly recognise and provide for the 'work of collaboration' in project planning & funding
- promote a positive attitude to collaboration within funding bodies
- select individuals for collaborative research teams carefully



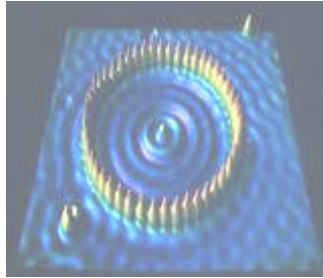
The “Social Dimensions of Nanotechnology” example (UK)

A programme where a social scientist was specifically included in the work programme of a specialist nanoscience institution

Benefits of the integrated programme included:

- increased knowledge of how to conduct a constructive public debate around the development of a potentially controversial technology
- improved arrangements for sharing facilities between projects and teams
- strengthened links with science stakeholders
- establishment of arrangements for collaborating
- participation of fundamental science practitioners in policy debate
- development of a more reflective, critical and socially aware approach to nanotechnology research and development.

[see forthcoming publications by Robert Doubleday]



Nanojury example (UK)

The NanoJury UK exercise involved putting the UK government's nanotechnology policy 'on trial'. Involved the public, scientists, science and social policy makers, ethicists, and others.

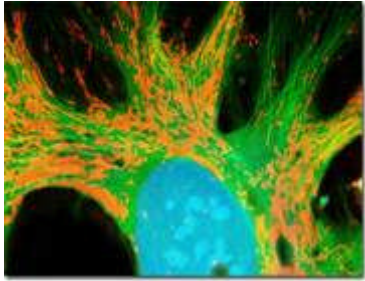
[see www.nanojury.org]



The Possum Biocontrol Research example (NZ)

New Zealand based work - social scientists, biologists/technologists, and PCE investigators engaged the public in a series of qualitative research, surveys, and consultations around the issue of possum biocontrol.

[Fitzgerald et. al (1994, 1996 & 2006), and the PCE (2000).]



.. Possum Biocontrol case

Benefits of the integrated research programme included:

- improved understanding of the social and cultural context of the possum pest 'problem', possum control, and research on new controls.
- the identification of society's performance standards for biocontrols
- the consequent re-shaping of research priorities (towards fertility control (immuno-contraception))
- the development of communication and risk management strategies for both the future research, and the potential future deployment of the technology

Discussion ..

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