

Restructuring Higher Education and Scientific Innovation (RHESI)

Question: How is the changing governance of higher education and public science systems affecting key features of scientific innovation in terms of the selection of research goals and the evaluation and integration of results?

Objectives: To establish

- 1) How university and other reforms are affecting resource allocation, performance evaluation and employment practices.
- 2) How these changes modify authority relations, i.e. the relative authority of:
 - the state,
 - university managers,
 - scientific elites,
 - funding agencies,
 - private companiesover the selection of research goals and the integration of results.
- 3) How the shifting authority relations are influencing:
 - a) the development of intellectual innovations in different sciences,
 - b) the creation of new scientific fields and
 - c) the integration of research goals and results.

Major Changes in the Governance of Public Science Systems

- Rapid Expansion of Public Support followed by Steady State Funding
- Increasing Researcher Dependence on Peer-reviewed Project Funding
- Incorporation of Public Policy Goals Into Resource Allocation Processes
- Increasing Delegation of Authority to Public Research Organisations (PROs)
- Increased Auditing of PRO Performance with Financial Consequences
- Encouragement of Active Research Commercialisation

Shifts in authority relationships due to governance changes

These governance changes have resulted in:

- Increased Authority of Epistemic Elites over Researchers through Project-based Funding
- Increased Authority of Public Policy Makers and Foundations over Research Goals and Strategies
- Increased Strategic Autonomy and Capabilities of PROs
- Increased Business and other User Involvement in Academic Research

to varying degrees in different national public science systems

Affected conditions for scientific innovation

These changes can be expected to affect:

- The intensity of competition for disciplinary prestige
- The strength of national and international scientific elites coordination of goals and results
- Researchers' time horizons for producing significant results
- The ease of establishing new research programmes and fields

Expected impact of authority relations on conditions for innovation

Conditions for Innovation	Changes in Authority relations			
	Increased Researcher Dependence on Epistemic Elites	Increased Influence of Public Policy Goals on Funding	Increased PRO Strategic Autonomy and Capability	Increased User Involvement
Competition for Disciplinary Prestige	Intensified	Reduced	Intensified in low prestige PROs, weakened in elite ones	Reduced
Epistemic Coordination of Research Goals and Results	Strengthened	Reduced	Strengthened in low prestige PROs	Reduced
Researchers' Time Horizons	Shortened	Shortened	Reduced in low prestige PROs, increased in elite ones	Shortened
Ease of Establishing New Fields	Reduced	Increased where state provides resources	Reduced	Increased for fields that promise technol. opportunities

Research Strategy

We expect the impact of authority relations on scientific innovation to vary :

a) between public science systems according to different patterns of authority relations



Comparison of countries:

Germany (3 universities)

Netherlands (2)

Sweden (2)

Switzerland (2)

(UK) (?)

b) between scientific fields according to their dependence on external funding, the extent of consensus on techniques and skills, and their relevance for public policy goals and commercial interests.



Comparison of four fields and major intellectual innovations

Possible candidates:

1) History (innovation: cultural history)

2) Biosciences (bioinformatics)

3) Solid state physics (high temp. supercond.)

4) Mathematics (financial mathematics)

Research methods

- Analysis of documents (published histories of authority relations and authoritative agencies, statistical data on the dynamics of research organisations and research funding);
- Semi-structured face-to-face interviews with representatives of the authoritative agencies;
- Two oral history interviews with senior academics for each field and country in order to cover personal perspectives on long-term developments.
- Bibliometric analyses of the relative influence of national and international elites in their research communities (where possible) and
- Semi-structured face-to-face interviews with researchers from the four fields (prepared by bibliometric analyses of their research biographies where possible).

Funding Status

The original proposal, accepted by the ESF, included the UK as the only large public science system in Europe with advanced and consolidated governance reforms.

However, the British ESRC decided not to support the empirical study of changing authority relations in the UK.

Redistribution of some of the contributions from the British IP:

- Coordination to the German IP with Uwe Schimank as new project leader;
- Historical analysis of changing authority relations in the UK to the Swedish IP, assisted by Richard Whitley and Maria Nedeva;
- Investigation of one of the three British universities to the Dutch IP;
- Coordination of the analysis of industry-university links to the Swiss IP; and
- Bibliometric analyses and mapping of research communities to the German IP, assisted by Maria Nedeva.

Additionally, Richard Whitley and Maria Nedeva are seeking financial support from other sources for the UK study.

Work plan and selected milestones

(1) Developing a comparative framework for the analysis of authority relations

Milestone: Comparative framework, Workshop in month six

(2) Historical reconstruction of the evolution of authority relations since the 1960s

Milestone: country-level and field level histories of authority relations in month nine

(3) Selection of cases, negotiation of access to universities and groups in universities, and developing field work methodology

(4) In-depth studies of the cases in each country

Milestone: Workshop on summaries of country cases in month 22

(5) Data analysis and synthesis of results for universities, countries and fields (first levels of comparison, start: month 23, duration: 6 month)

(6) Comparison of universities and fields across countries and comparison of country studies

Milestone: Final report in month 36

Research teams

Germany: Uwe Schimank, University of Bremen
Jochen Gläser, TU Berlin
N.N. (postdoc)

Netherlands: Jürgen Enders, University of Twente
N.N. (postdoc)

Switzerland: Dietmar Braun, University of Lausanne
Martin Benninghoff, University of Lausanne
N.N. (postdoc)

Sweden: Lars Engwall, Uppsala University
N.N. (postdoc)

UK (Associated Partners):
Maria Nedeva, University of Manchester
Richard Whitley, University of Manchester