

Interdisciplinarity

Learning, Knowledge and Behaviour TCPC



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Overview

1. What is interdisciplinarity?
2. Disciplines
3. Interdisciplinary issues, journeys
4. Doing interdisciplinary research



What is interdisciplinarity?

- Work that draws in two or more disciplines
- Can be combinations from science and/or social science
- Can create new ‘sub-disciplines’
- Historical disciplinary boundaries are artificial, contextual and subjective



What is interdisciplinarity?

- 'Accident of history' that 'disciplines' emerged as they did
- The attachment of disciplines to set methods
- Complex research problems need interdisciplinary, mixed methods
- Innovative work that challenges assumptions of one discipline, or its primary methods



Interdisciplinarity and multi-professionalism

- Application, applied
- How do professions relate to disciplines?
- Are they inevitably interdisciplinary in their knowledge base?
- Multidisciplinary – using a range of disciplines, with core expertise
- Communication and relational aspects for maximum benefits



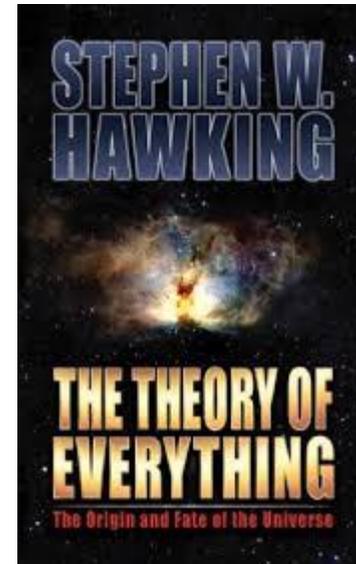
Interdisciplinarity – science and social science

- Relationship between science and social science
- Where a preference for ‘scientific’ methods
- Has this strengthened the influence of some social science disciplines over others? (economics, psychology)
- Social science becomes science?
 - Psychology - neuropsychology
 - Economics – ‘physics envy’, theoretical maths



Influence of post structuralism, post positivism

- Challenges within science itself
- Newtonian – absolute laws
- Einstein – general relativity
- Quantum probability
- No ‘Theory of Everything’



Influence of post structuralism, post positivism

- Reaction 'against science' in some social sciences
- Sociology – turn to 'cultural studies'
- Stuart Hall (1932 – 2014)



Interdisciplinary: core issues

- Pragmatics
- Innovation
- Methods
- Values



- We are...at a bifurcation point in our existing systems of knowledge. The present structures almost certainly cannot hold. But where we are heading is most uncertain.'

Immanuel Wallerstein (2002)

Re-inventing the Social Sciences

Disciplines: concerns about classification

- Super disciplines

Natural Sciences

Humanities



Disciplines

- **Super disciplines**

Natural Sciences

Humanities

Social Sciences

Where should we locate geography?



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Disciplines

- Super disciplines

Natural Sciences

Humanities

Social Sciences

Where should we locate business studies?



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Art

- Is Art a super discipline of its own, or a humanity?



Social sciences

- Economics
- Psychology
- Sociology
- Politics
- Anthropology



Sub-disciplines, interdisciplinary areas?

- Criminology
- Public policy
- Social policy
- Psychosocial
- Behavioural economics
- Political philosophy



A disciplinary crisis - An interdisciplinary solution?

- The case of Economics
- Tipping point – Financial crisis



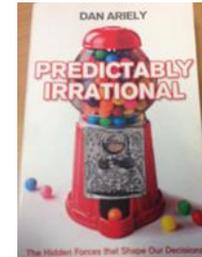
Retreat into neoclassical, micro economics

- Mathematical theories about changing prices and costs
- Denial of the environment, political economy
- Assumptions about competition as a moral system
- Assumptions about human competitive behaviour and rationality
- Separation of economics from other social scientists
- Narrowing of the discipline



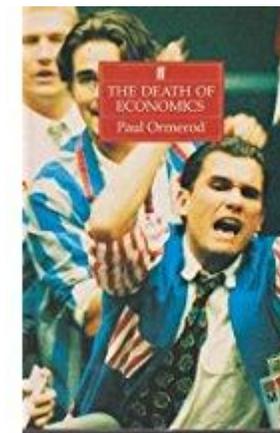
Behavioural economics

- Challenge to the idea of rational competitive motivation of actors in the economy
- *Challenging one of the major assumptions*
- Taking ideas from social psychology
- Complex motivations in the market place, with some predictability
- Daniel Kahneman 2002 - Noble prize for economics
- But still describes himself very much as a social psychologist.



Other solutions

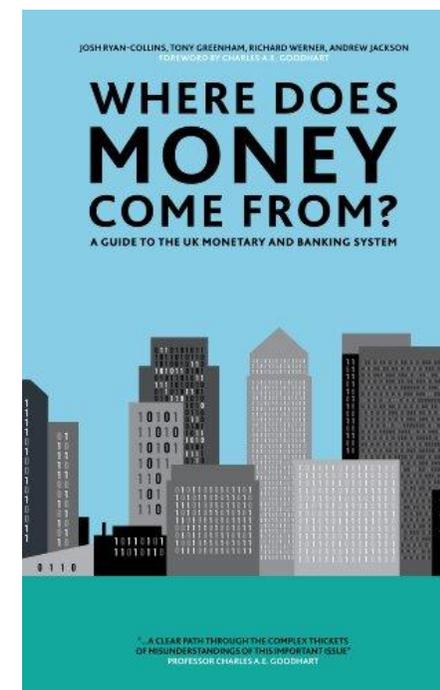
- *Re-emergence of other (historical) perspectives*
- *Generation of new perspectives*
- Student revolt, political revolt against failing of the discipline
- *Criticism from within*
- Paul Ormerod (1994) *The Death of Economics*
- Thomas Piketty (2013) *Capital in the 21st Century*



The periphery of the discipline

- Ryan Collins, et al (2013) *Where does money come from*
- Kate Raworth (2015) *Doughnut economics*

- *The cost of being on the periphery?*
- *'Working the boundaries'*



Anti disciplinary

- Andrew Pickering
- ‘Ontology and Antidisciplinarity` in Barry and Born (2013)
 - Non modern sciences
 - The world is not fully knowable
 - Cybernetics, complexity, systems, holistic
 - Not interdisciplinary, but antidisciplinary



Doing interdisciplinary research: themes

- ‘Top down thematic funding programmes are one of the most common approaches adopted by funders to encourage interdisciplinarity’
- RCUK (2016: 5)
- Problem based learning



Doing interdisciplinary research: risk

- ‘...researcher led ‘bottom up’ approaches are required, and funding agencies should support such approaches despite the potential risks associated with the most innovative ideas’
- RCUK (2016: 5)
- Blue skies



Doing interdisciplinary research: pragmatics

- ‘...interdisciplinary research should be viewed as a means to an end and not an end in itself. Several funding agencies emphasised that practices and policies towards interdisciplinarity should be driven by the required outcomes and scientific demand’
- RCUK (2016: 5)
- outcomes



Doing interdisciplinary research: resources

- Infrastructure
- Time
- Scale
- Space: co-location

RCUK (2016)



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Conclusions

- Structures and Cultures
 - Histories
 - Knowing past and/or influences
- Relational - Innovation and Communication
- Activities (Methods)
 - Mixed methods
- Applied, problem solving
 - Drive for answers



Discussion questions

- To what extent do you see your own career history thus far as disciplinary and/or interdisciplinary?
- What do you see as the strengths and weakness of your own 'discipline' or current 'interdisciplinary approach'?
- Is there a mismatch between disciplinary undergraduate studies and interdisciplinary postgraduate study/research? – or is it a logical progression?
- Why has there been a decline in interdisciplinary undergraduate degrees and offerings?
- What is the relationship between interdisciplinarity and method?



Further discussion questions

- Which disciplines do you most see as likely to be fruitful for collaboration with your own areas of research? Why?
- What disciplines do you see as least likely to be fruitful for collaboration with your own areas of research? Why?
- What future sub-disciplinary/interdisciplinary areas do you think will emerge as increasingly important?

