

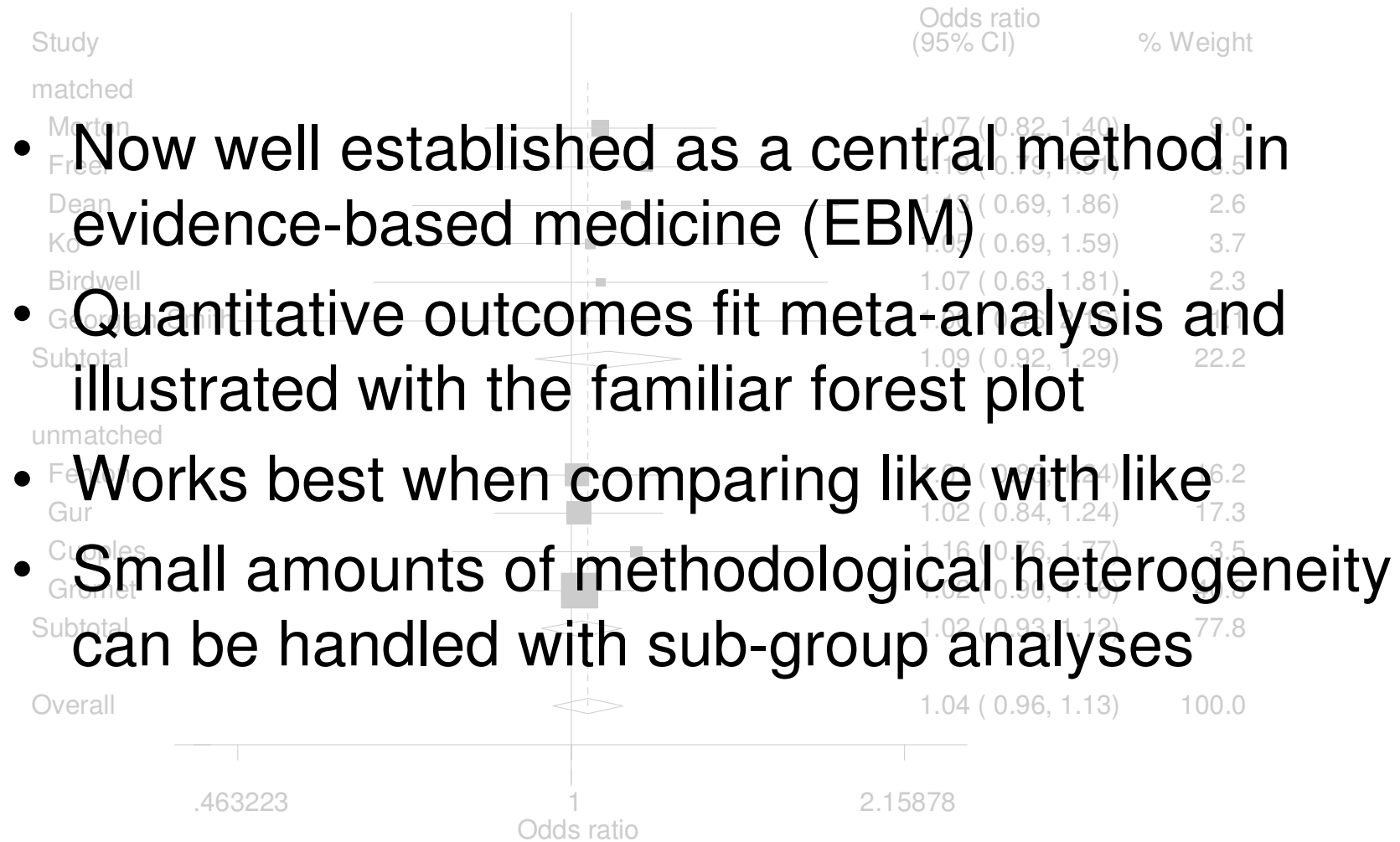
**A systematic review of electronic patient records using the meta-narrative approach: Empirical findings and methodological challenges**

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# Traditional systematic review



- Now well established as a central method in evidence-based medicine (EBM)
- Quantitative outcomes fit meta-analysis and illustrated with the familiar forest plot
- Works best when comparing like with like
- Small amounts of methodological heterogeneity can be handled with sub-group analyses

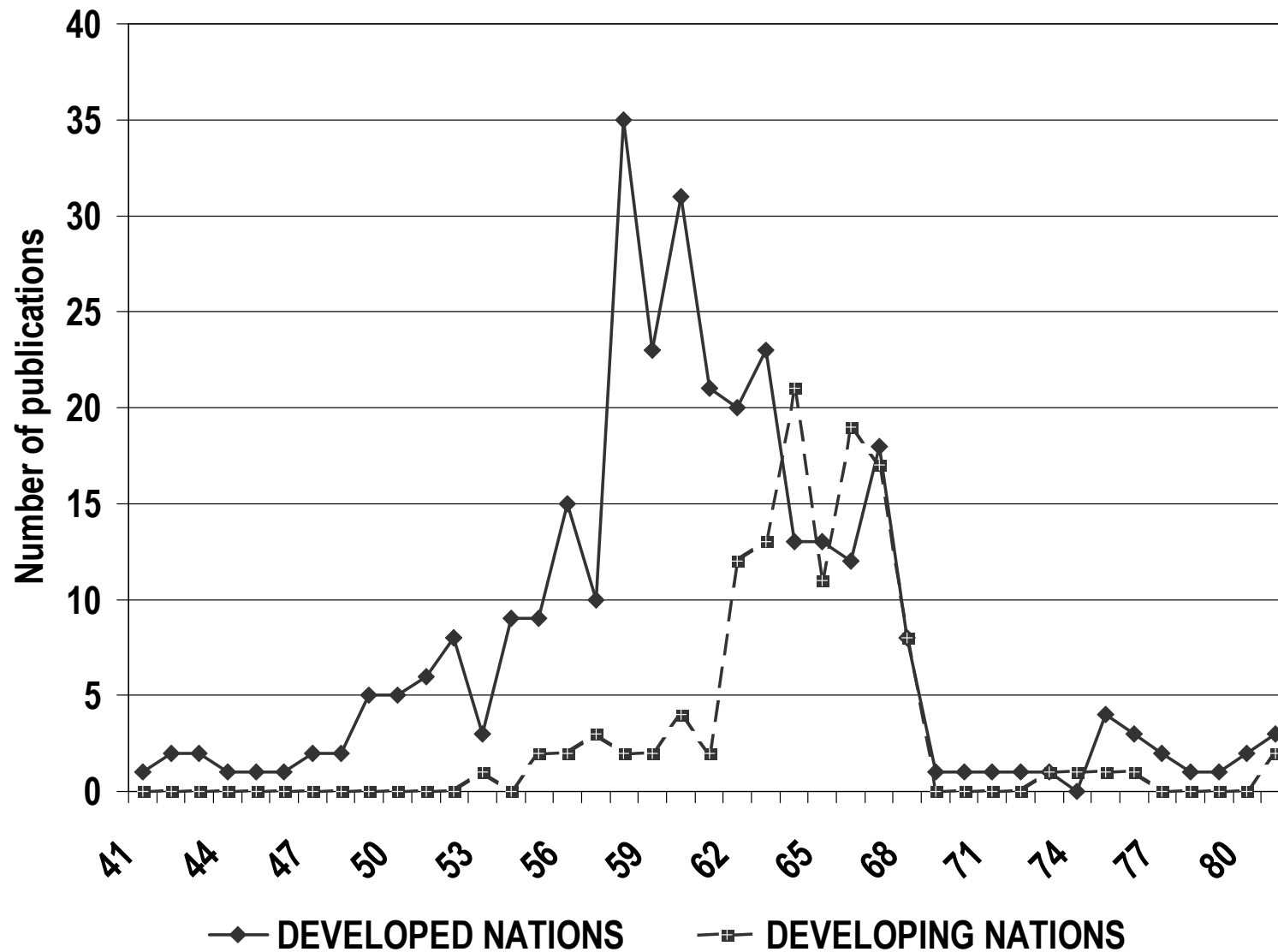
## The meta-narrative approach

- Heterogeneity and pluralism
  - Problems of heterogeneity multiply with more complex questions, with multiple outcomes, varying systems and different methodologies – different **paradigms**
  - Various approaches developed to review broad methods
- Meta-narrative review
  - Greenhalgh, Robert, Bate, Macfarlane & Kyriakidou (2005). *Diffusion of Innovations in Health Service Organisations: A Systematic Literature Review*. Blackwell BMJ Books.
- Use a historical and philosophical perspective as a **pragmatic** way of making sense of a diverse literature

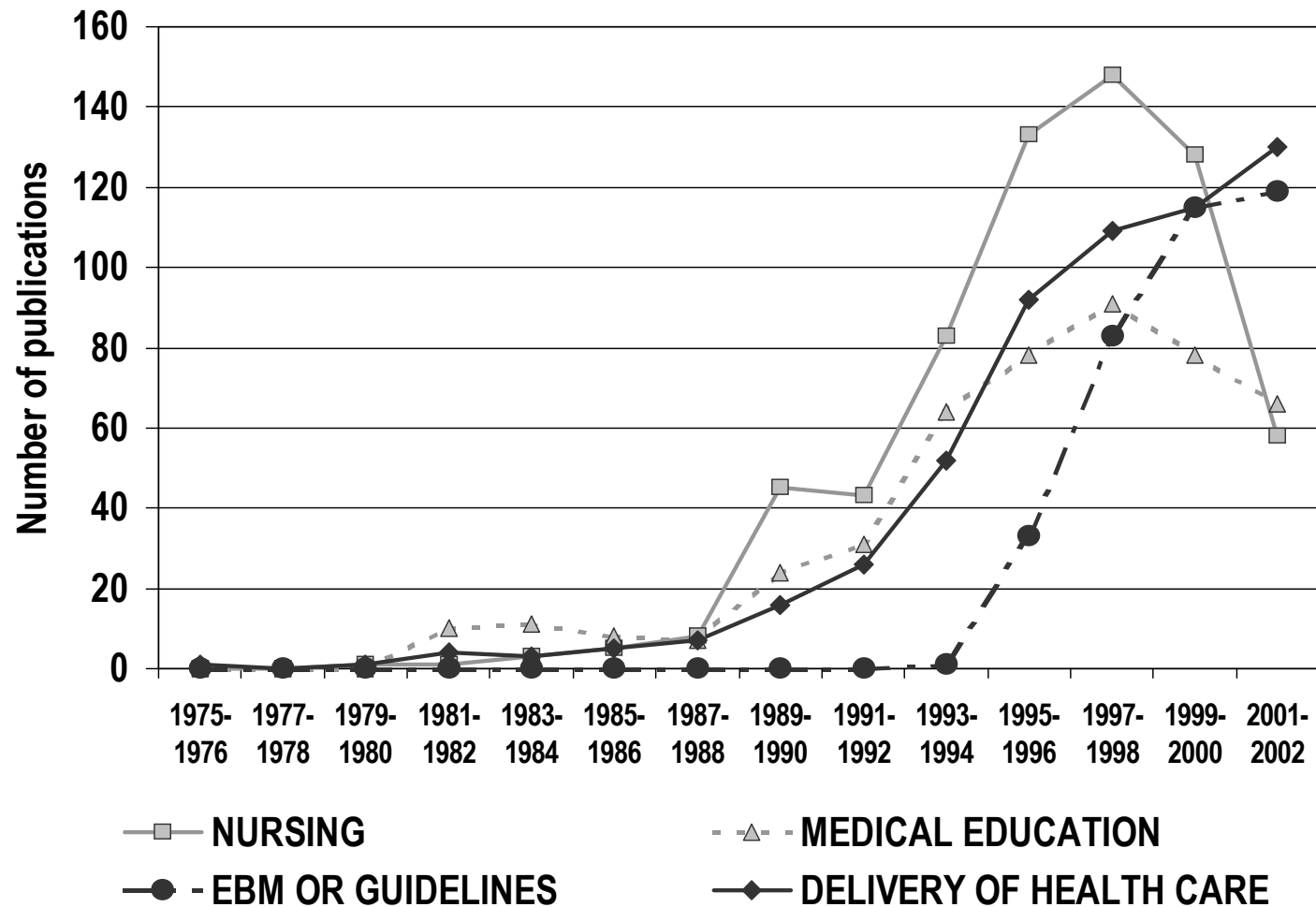
## Key questions (from Kuhn, “The structure of scientific revolutions”)

- What research teams have researched this area?
- How did they CONCEPTUALISE the problem?
- What THEORIES did they use to link problem with potential causes and impacts
- What METHODS did they define as ‘rigorous’ and ‘valid’?

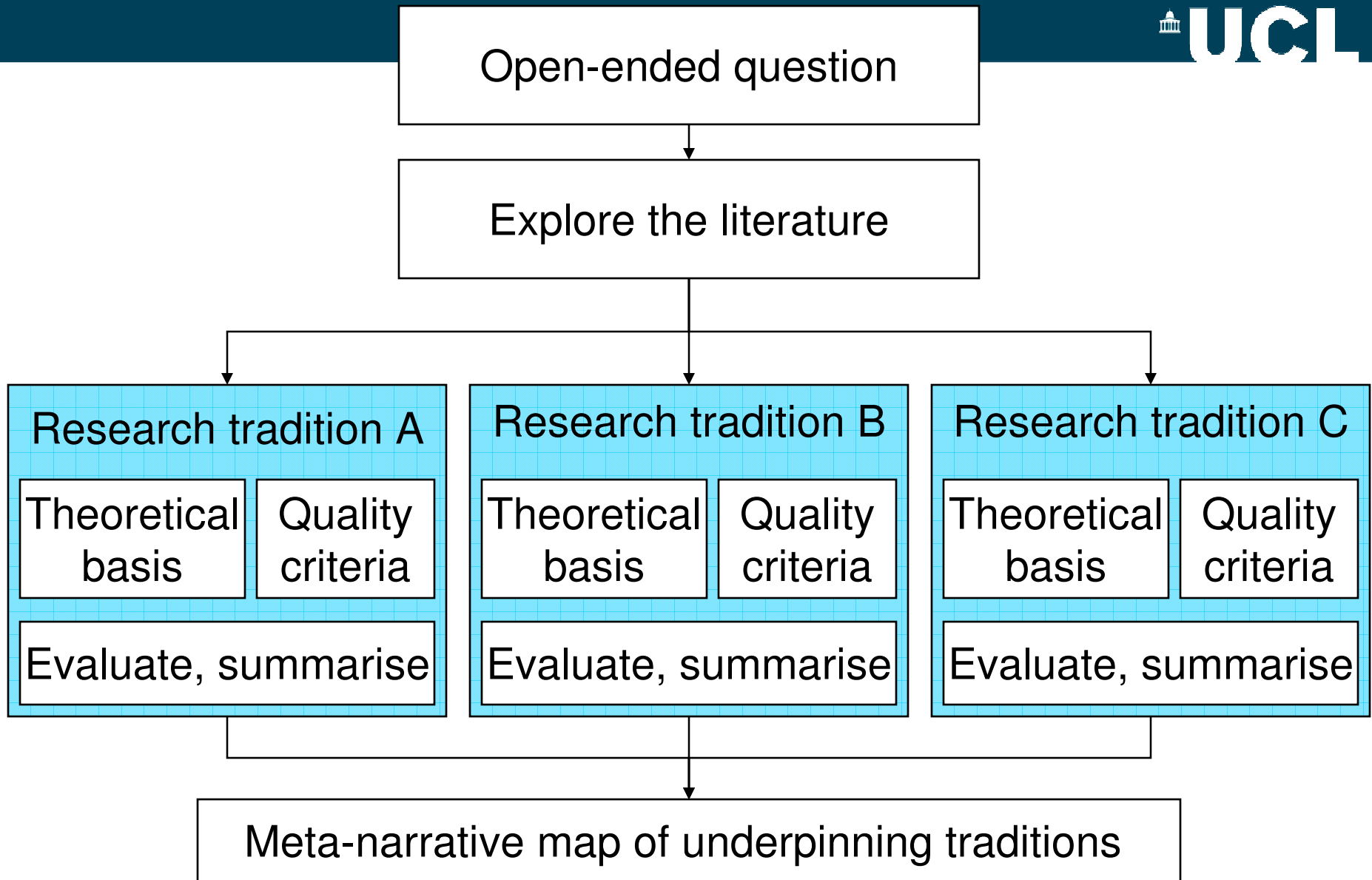
Application more post-Kuhnian than Kuhnian



**Rise and fall of diffusion research in rural sociology**



**Rise and fall of diffusion research in health related fields**



## Meta-narrative review (how to get started)



## Synthesis phase

- Highlight similarities and differences in the findings from different traditions
- Contestation between the disciplines is data (and leads to higher order constructs)
- Offer conclusions of the general format “in circumstances such as X, don’t forget to think about Y”

## How did meta-narrative approach perform?

- With that first meta-narrative review and a small second review (on direct observation of medication delivery), papers/studies fell reasonably neatly into distinct ‘piles’
  - different research traditions were largely separate and did not cite each other
- Proved useful way of making sense of diverse literatures

# New review: electronic patient records in organisations

*Preliminary findings – thoughts welcome!*

- Number of traditions were apparent
  - Biomedicine
    - Health informatics
    - Quality & safety
    - Healthcare information systems/change management in health services
  - Computer supported cooperative work (and HCI more generally)
  - Information systems
  - Science & technology studies
- However, more complicated interrelationship between these
  - Cross-talk between different traditions

## Biomedicine

- Hopeful literature
- Technological determinism & utopianism
- System as 'black box'
- Little more than lip service to a socio-technical perspective

## Information systems

- 'Conventional' IS research is positivist: focus on models and 'resistance'
- Practice-based IS research is interpretivist: Orlikowski's technology structuration, based on Giddens' structuration theory

## CSCW

- EPR not container of facts but tool supporting work
- Different healthcare practitioners do different work so need different records
- Challenges idea of an 'agreeable' record

## STS

- Critical perspective
- ANT/sociology of translation
- Beyond dualism of reality vs. record-as-model
- SCOT: how codes & categories shape interpretation and use of technologies



# Interrelationships or silos?

## Silos

- Most health informatics literature ignores socio-technical perspectives
- Technology structuration (Orlikowski) largely US organisational sociologists and doesn't cite/is mostly not cited by European critical sociologists

## Not silos

- Biomedicine meets socio-technical approaches
  - Cross-disciplinary appeals (Pratt *et al.*)
  - 'Multilingual' researchers (*e.g.* Berg)
- Socio-technical approaches aligning
  - CSCW and STS have common roots in ANT, Zuboff *etc.*
  - Links between CSCW and STS over the years (*e.g.* Suchman)
  - Coming together of CSCW, STS and IS with newer researchers (*e.g.* Ellingsen)
  - Østerlund draws on Orlikowski and Berg + brings in social psychology
  - Technology structuration meets ANT with "narrative networks" (Pentland & Feldman)

Berg & Bowker (1997), *Sociol Quart*, **38**: 513-37

Berg (1999), *Comp Supp Coop Work*, **8**: 373-401

Berg (2003), *Methods Inf Med*, **42**: 337-44

Ellingsen & Munkvold (2007), *Int J Integrated Care*, **7**

Østerlund (2004), *J Center Inf Studies*, **5**: 35-43

Pentland & Feldman (2007), *Organization Sci*, **18**: 781-95

Pratt, Reddy, McDonald *et al.* (2004), *J Biomed Inform*, **37**: 128-37

Suchman (1994), *Comp Supp Coop Work*, **2**: 21-39

## Why? What does it mean?

- Common roots (like ANT) perhaps made it easy for CSCW and STS to come together
- A result of the greater accessibility of academic writing through the Internet?
- Repeated overtures from more socio-technical researchers to biomedical informatics up against an optimistic political rhetoric and a naïve, simplistic and fallacious view of EBM



**THANK YOU FOR YOUR ATTENTION**



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