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Using Domain Analysis and Organisational Theory to Understand e-Science Sustainability

Jenny Fry

Oxford Internet Institute, University of Oxford

Mike Thelwall

Statistical Cybermetrics Research Group, University of
Wolverhampton

The e-Science Vision



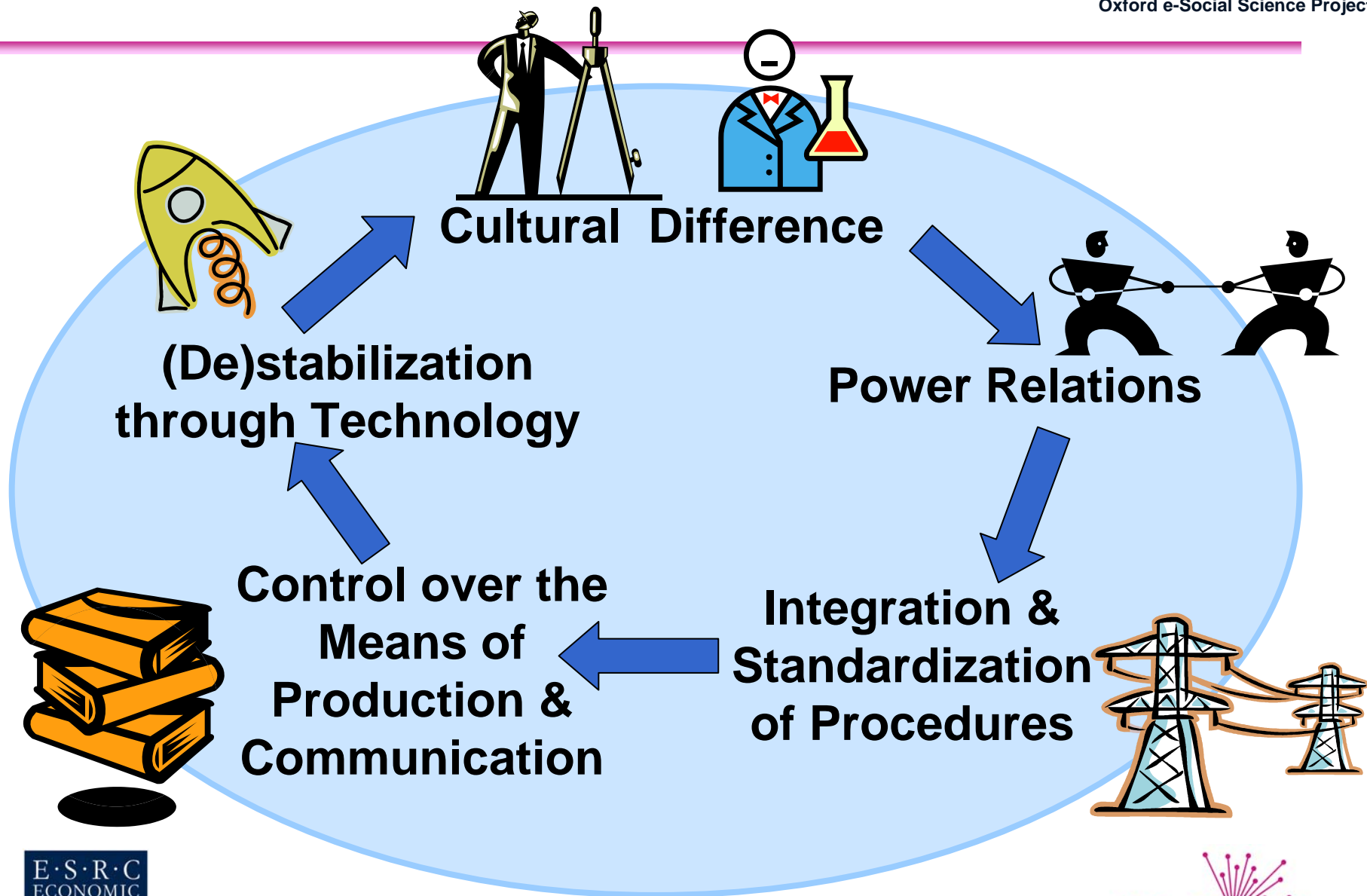
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“e-Science means science increasingly carried out through distributed global collaborations enabled by the Internet, using very large data collections, terascale computing resources and high performance visualization” (Sir John Taylor)

Academic Tribes and Territories



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The contribution of domain analysis and organisational theory



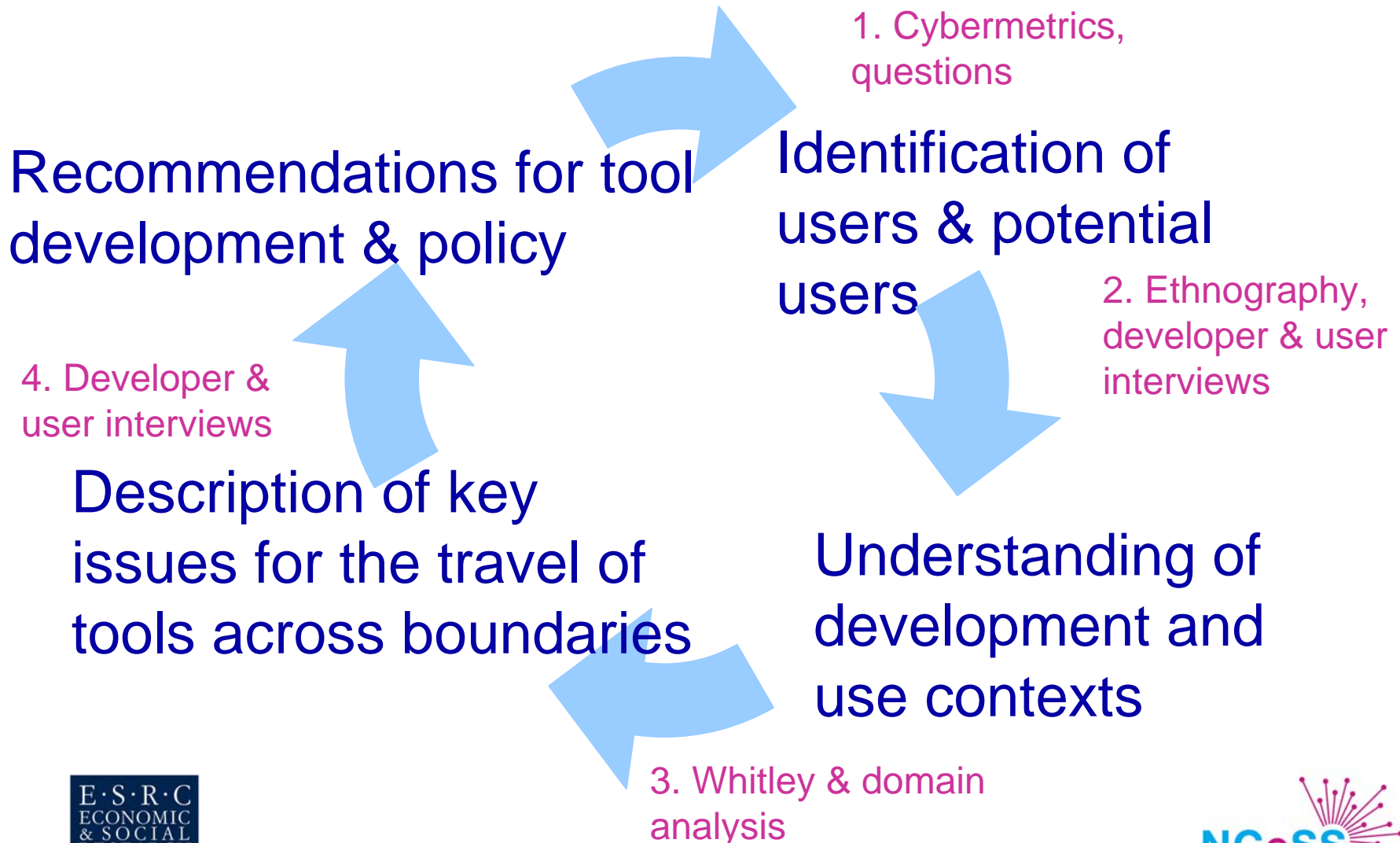
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- Domains as discourse communities or communities of practice, rather than focusing on users in a generalized and context independent manner
- Domain analysis can enable designers to understand the key cognitive and social factors that shape practice
 - e.g. research goals, intellectual priorities, interpersonal recognition and trust, coordination styles and incentive systems
- Role of Whitley's organizational theory in understanding multi-faceted nature of research culture
 - The degree of *mutual dependence* between researchers (or fields) in making competent and significant contributions to the body of knowledge
 - The degree of *task uncertainty* in producing and evaluating knowledge claims

The Method: e-Science Spectroscopy



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Contribution of e-Science Spectroscopy



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- E-science spectroscopy is an attempt to develop a method to assess and promote the sustainability of e-science projects by a focus on users and using social science theories of domain analysis and work organisation
- The incorporation of cybermetric techniques allows researchers access to gather and analysis data about non-users and potential users
- Beneficiaries
 - developers of ongoing and future e-science projects, who should have improved chances of gaining additional users through understanding the key issues and following the guidelines.
 - scientists who are able to use new e-science technology as a result of improved usability considerations.
 - Funding bodies should also benefit from an improved ability to evaluate e-science proposals based upon an improved understanding of usability issues