

## **ANNOTATED BIBLIOGRAPHY**

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**Dr. Glyn Everett**

## **Introduction**

This annotated bibliography contains journal articles, reports and online resources relating to the contemporary state-of-play of interdisciplinary research within the social sciences, with an emphasis upon the United Kingdom. It forms the initial part of a scoping study conducted by the NCRM hub between October 2008 and March 2009. A literature review will also be produced during this time, and so it was decided that the annotated bibliography would not review books in the field but rather would concentrate on published articles, etc.

Much has been written, and a good number of inter-Research Council programmes established, to try and encourage and develop interdisciplinary endeavours that bring together researchers from the social sciences, natural sciences and engineering, and arts and humanities. It would appear that perhaps less work has been done that seeks to bring together researchers from different social sciences, to share expertise on different methodologies used and different understandings of common areas of concern.

This annotated bibliography will be useful to those with an interest in this field, summarising a range of recent publications (see methodology). It is not intended as a comprehensive survey of available literature, but rather as an introductory selection of important texts that will help the reader to map out something of the various centres, journals and people that have recently been engaged in such work, as well as understandings of key concepts and issues in the field. Together with the literature review and mapping documents, these should provide a good grounding in recently completed work and ideas of where to look next in pursuing the matter further.

### ***Methodology***

The conditions for inclusion in this short bibliography were that articles should relate to research that was conducted in the United Kingdom and should have been published between 1<sup>st</sup> January 2000 and 30<sup>th</sup> September 2008. Initial scopings of available and relevant literature were conducted using several web-based search-engine tools. Initial searches were conducted through Web of Science, Google Scholar and open Google searches, for associated keywords outlined in the Glossary attached to this text. The searches gathered a wide range of documents which then needed to be filtered; firstly by date and then more selectively by location (to allow for UK-based scholars publishing in international journals; and then further through looking at titles, keywords and abstracts to select relevant texts. These initial searches were then supplemented with scans of relevant centres' websites for listed publications, online searches through several known journals that were likely to contain useful materials (*Disability and Society*, *Economy and Society*, *Futures* and *Real World Economics Review*) and the following of references given in articles that were reviewed.

The first section of the bibliography presents materials covering theoretical considerations around interdisciplinary research and discussions over terminology and different ways of conceiving interdisciplinary work, as well as more general articles on the processes and difficulties encountered in conducting such and a couple of reviews of successes and failures in attempts to promote interdisciplinary working. The following three sections present articles covering three different areas of research: development studies, environmental studies and disability studies. After

some discussion, these three case studies were selected by the project team for the purposes of conducting a review of interdisciplinary research in practice; these areas are of themselves somewhat interdisciplinary, and the review was so directed as to select articles where attempts were made to develop research relationships with other disciplines beyond the normal scope of the area. These were also areas of interest to one or several members of the *NCRM Interdisciplinary Research Scoping Study* project team.

Environmental Studies is a field that is sometimes, perhaps even mostly, viewed as being of greater concern to natural scientists, yet within such research there are many sub-areas of relevance to social science questions and approaches. Further, there are large areas of concern directly to different social sciences within the study of attitudes to and understandings of our natural environments, as well as the social institutions which can enable or obstruct actions to protect these and the relative costs and benefits of doing so. Including Environmental Studies within the annotated bibliography was seen as being relevant because of the urgency of subject-matter, and the importance of considering how the social sciences can make valuable contributions towards shaping discursive practices around this area.

Discussions are still (and probably always will be) strong within Development Studies as to the relative importance of – as well as the interplay between – the various factors argued to constitute, or contribute to, social and economic development. Such studies can show strong cross-over with research around the environment, especially with regard to thinking about how we conceive of ‘progress’ in improving standards of living. This, along with the fact that social science contributions to both Development and Environment Studies have tended to be dominated by mainstream economics, but that other voices have in the past few decades begun to be heard more distinctly, make them both areas of considerable interest to any review of inter-social science interdisciplinary research.

Disability Studies is still a relatively young and emergent interdisciplinary endeavour, drawing in researchers with a wide variety of backgrounds in discussing and negotiating a common language, boundaries and frames of reference. It was seen as being of interest to a review of social science interdisciplinarity because it is still, as a newly-emergent discipline, in the process of negotiating attempts to forge a common language, to agree methods and terms of enquiry, and to evaluate the potential contributions to be made or drawn from neighbouring disciplines. Disability Studies was further of interest to the main researcher conducting the annotated bibliography, who is himself a wheelchair-user with a growing interest in the field.

### **Key Issues**

A number of key issues were emergent from the production of the annotated bibliography.

- The relative value of conducting multi-, inter- or transdisciplinary research was discussed by a number of parties. The different purposes for which research was carried out, and the different interested parties, as well as budgetary and time-constraints, would all appear to play their part in deciding upon the relative value of these different approaches to each piece, or programme, of research.
- A closely related question is that of the purposes of taking an interdisciplinary approach; it has been pointed out that there are two principal, and quite distinct

possibilities here, conducting interdisciplinary work in order to bring minds and methods together to solve problems that otherwise could not be effectively tackled from within one disciplines, and pursuing interdisciplinarity in seeking to develop a discipline beyond its current boundaries or limits. This can be seen at points in the bibliography here with regard to economics and environmental research.

- The extra resources that can be required by interdisciplinary research was a matter of concern for some researchers, who feared that this could count against such proposals when funding applications were being reviewed. Extra time was seen as being needed developing ideas with a truly interdisciplinary focus, developing a common language, developing trusting working relationships and negotiating agreed understandings, practices and standards. This extra time necessitates extra funding.
- Questions around the relationships that should underlie interdisciplinary work were addressed in several papers; whether the focus of interdisciplinarity should be upon producing syntheses of different disciplinary perspectives and achieving a consensus as one of the end-products, or whether an agonistic relationship between the members of the different disciplines could actually be a positive influence upon the research process and outcomes.
- The dangers of the possibly negative impact upon the careers (especially for earlier career researchers) of those pursuing interdisciplinary research were discussed by a number of authors. This related directly to issues of institutional and Research Assessment Exercise (RAE) obstacles to interdisciplinarity, below.
- The RAE was seen by a good number of authors as discouraging the development of interdisciplinary work (see, for example, Bracken & Oughton 2006). Whilst the Research Councils may put out calls for such, problems are encountered at the stage of seeking to get published articles from findings; interdisciplinary work can be seen as being unsuitable for journals in any particular disciplinary field which has been drawn upon, and any research which does not result in published papers is wasted research-time in RAE terms. Further, the disciplinary organisation of universities was argued to encourage more inward-looking communities and thereby discourage, or at least to not encourage, interdisciplinary working.
- The problem with the suitability for journals just mentioned, mirrors the problems that can also be found with applications for research funding. This is that at the reviewing stages, for articles or tenders, review panels that are constituted of people from distinct disciplinary backgrounds can fail to see the value in interdisciplinary work.
- A question which did not emerge directly from the reviewed materials, but which rather appeared for the NCRM team in the process of producing this document, was of whether one person can *be* interdisciplinary or *produce* interdisciplinary work, or whether the nature of interdisciplinarity necessitates a team of at least 2 researchers from different disciplinary backgrounds. This becomes particularly apparent in discussing fields that are arguably of their nature interdisciplinary, such as our chosen areas of Development, Environment and Disability Studies. It points to the potential value in conducting future research looking at the biographies of certain well-respected interdisciplinary researchers (for example, Marilyn Strathern and Julie Klein).

## Theoretical Explorations

Balsiger, P.W. (2004) 'Supradisciplinary research practices: history, objectives and rationale' in *Futures* 36:4, 407-421.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Bruce et al., Després et al., Horlick-Jones & Sime, Klein, Lawrence & Després, Pinson and Ramadier.*

*Philip Balsiger proposes supradisciplinarity as a generic term for all cross-disciplinary work, and proposes that supradisciplinarity is problem-oriented. He then goes on to outline somewhat usual distinctions between multi- and interdisciplinarity (multi- features no cross-pollination and is not problem-oriented, inter- is a more active collaboration). However his understanding of transdisciplinarity is somewhat different, emphasizing that this is a crossover between science and non-science, that is, the 'affected persons' or the general public. Balsiger argues that the relationship between the co-working disciplines should be non-hierarchical, but he does recognize that there will often be a relationship of 'guide and supply', whereby the norms, needs and/or expectations of one discipline will play a greater role in shaping the research. Interestingly he argues that disciplinary criteria are no marker for quality research; continuing the emphasis upon problem-solving, he argues that markers of problem-solutions, such as the economic viability, ecological sustainability or public acceptability of the products of research will stand as better markers of research 'quality'.*

Barry, A., Born, G., and Weszkalnys, G. (2008) 'Logics of Interdisciplinarity', in *Economy and Society* 37(1), 20-49.

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), which looked at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Strathern (various) and Weszkalnys (2006).*

*This is a complexifying piece in which Andrew Barry, Georgina Born and Gisa Weszkalnys argue that the Modes 1&2 distinction of knowledge production (see Glossary) is over-simplistic, and that we should not over-estimate the powers of interdisciplinary research over disciplinary research. Disciplines, they contend, can be very heterogeneous and adaptable, and their boundaries remain always open and contestable. The authors argue that interdisciplinary research need not always be of the integrative-synthesis model, but rather such research can benefit from an agonistic-antagonistic relationship between the disciplines involved. Interdisciplinary research can furthermore also be undertaken in order to produce the problems that it then seeks to address. This position stands in contrast to a common understanding of interdisciplinary research as being established in order to solve problems that no individual discipline can on its own.*

Boix Mansilla, V., Gardner, H. (2003) 'Assessing Interdisciplinary Work at the Frontier. An empirical exploration of 'symptoms of quality''. Downloaded from [<http://www.interdisciplines.org/interdisciplinarity>] on 15/10/08.

*A paper that forms part of the seminar-series 'Rethinking Interdisciplinarity', which was supported by the Centre National de la Recherche Scientifique (C.N.R.S.) project "Société de l'Information". Some lengthy discussions have developed from the papers, which are all available on the mentioned website, making this a very valuable resource. See also Fuller, Hacking, Heintz and Origgi, Nowotny and Sperber.*

*This paper presents a first report on the findings of an exploration of interdisciplinary researchers' views of interdisciplinarity, and the means by which they seek to assess the quality of such work. Veronica Boix Mansilla and Howard Gardner interviewed 60 researchers working in 6 interdisciplinary research institutes, through which they found that the researchers tended to rely upon indirect quality indicators (such as papers published, patents registered and successful funding applications) rather than measures which related to the 'epistemic quality' of the work conducted. The authors warn that disciplinary assessments of interdisciplinary research can somewhat miss the point, and argue instead that 'consistency, balance and effectiveness' are the three key markers by which to measure interdisciplinary research. By these they mean: consistency with the interdisciplinary research's multiple disciplinary antecedents (which can sometimes be conflicting); balance in weaving together different (possibly conflicting) disciplinary perspectives, and the research's effectiveness in advancing understanding.*

Bracken, L.J. and Oughton, E.A. (2006) 'What Do You Mean?': The importance of language in developing Interdisciplinary Research' in *Transactions of the Institute of British Geographers* 31, 371-382.

*A paper looking at the importance of taking the time to develop shared vocabularies and understandings in order to produce effective interdisciplinary research, further arguing that this development of a common language can help in developing relationships of trust that will facilitate research. Louise Bracken and Elizabeth Oughton refer here to the use of different cultural dialects and metaphors.*

*The immediate focus in the paper is upon the meeting of physical and human geography, but the relevance of the argument clearly holds for relations between different social sciences as well. The authors further make very brief reference to the obstructions posed by the Research Assessment Exercises (RAEs), and the consequent pressure to publish, as discouraging interdisciplinary research, given the difficulty of finding appropriate journals for the publication of findings.*

Bridges, D. (2006) 'The Disciplines and Discipline of Educational Research' in *The Journal of Philosophy of Education* 40:2, 259-272.

*An interesting reflection upon the outcomes of interdisciplinary research and the question of when to stop thinking in interdisciplinary terms, and begin to address the new area of research as a discipline in itself, with its own set of rules, etc. David Bridges speaks of Foundation Disciplines and 'new disciplines'; the argument is that through cross-pollination or collaboration (so inter-, if not multi-disciplinary work), new disciplines can emerge to develop and address new problems. The author pitches Education as a 'new' emergent-discipline in this regard, growing from its Foundation Disciplines of*

*Philosophy, Sociology, Psychology and the History of Education. He argues that without a coherent 'discipline', in the sense of a shared language and a rule-governed structure of enquiry, we lose the conditions that make a community of arguers possible. Bridges then contends that the 'discipline' of Education has seen much diversification in methods deployed, and understandings, through the meeting of the Foundation Disciplines, but that what is needed now is to move beyond diversification of method into the development of method. The concluding argument is that we have had enough ideas-games, and it is now time to produce the discipline.*

Bruce, A., Lyall, C., Tait, J. and Williams, R. (2004) 'Interdisciplinary Integration in Europe: The case of the Fifth Framework Programme' in *Futures* 36:4, 457-470.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Després et al., Horlick-Jones & Sime, Klein, Lawrence & Després, Pinson and Ramadier.*

*In this paper Ann Bruce, Catherine Lyall, Joyce Tait and Robin Williams outline the findings of their investigations into 'interdisciplinary integration' under the EU Fifth Framework Programme (FP5). The paper provides a brief outline of their understanding of trans-, inter- and multi-disciplinarity, before talking around a distinction between Mode 1 and Mode 2 interdisciplinary research, a distinction rarely made elsewhere. By this distinction, it is argued to be Mode 2 interdisciplinary research that is more directed towards problem-solving, and which features more stakeholder and public involvement, rather than simply interdisciplinary research per se. The team found that levels of interdisciplinarity varied enormously between projects, but that very few projects fully integrated disciplines. The paper also provides an interesting outline of the perceived motivations, costs and benefits of undertaking interdisciplinary research, and argues that disciplines remain useful insofar as they constrain what the researcher has to think about. The paper concludes by noting how interdisciplinary research requires more time and resources to develop understandings, common approaches and the sense of a team than does disciplinary research, where all team-members would already be part of a community..*

Chettiparamb, A. (2007) *Interdisciplinarity: A literature review*. University of Southampton: The Higher Education Academy, Interdisciplinary Teaching and Learning Group.

*Quite an extensive review covering selected literature from the 1950s to the present day. The end-point focus is upon teaching interdisciplinarity rather than interdisciplinary research, but the first few chapters are very interesting for their scoping of the literature and discussions of disciplinarity and interdisciplinarity. Angelique Chettiparamb provides a lot of references in this document that have not been followed here due to their date of publication, their non-UK focus or their focus upon teaching, but this document is well worth reading as an introduction to understandings of, and the issues surrounding, interdisciplinarity.*

Després, C., Brais, N. and Avellan, S. (2004) 'Collaborative Planning for Retrofitting Suburbs: Transdisciplinarity and intersubjectivity in action' in *Futures* 36:4, 471-486.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Bruce et al., Horlick-Jones & Sime, Klein, Lawrence & Després, Pinson, and Ramadier.*

*The principal subject-matter of this paper is less relevant than other articles from this issue, however section 2 presents a discussion of the distinctiveness of transdisciplinarity. Here Carole Després, Nicole Brais and Sergio Avellan argue that disciplines are the result of a methodological reduction of reality to manageable units for knowing. They then outline their understanding of the differences between inter- and trans-disciplinarity, which although not differing from others' understandings, is briefly, clearly and well-articulated. They argue that transdisciplinary work could not function without regular physical meetings; geographical distance and cyber-contact would not work. They link transdisciplinary research closely with the notions of intersubjectivity and collaborative planning.*

Fuller, S. (2003) 'Interdisciplinarity. The Loss of the Heroic Vision in the Marketplace of Ideas'. Downloaded from [<http://www.interdisciplines.org/interdisciplinarity>] on 15/10/08.

*A paper that forms part of the seminar-series 'Rethinking Interdisciplinarity', which was supported by the Centre National de la Recherche Scientifique (C.N.R.S.) project "Société de l'Information". Some lengthy discussions have developed from the papers, which are all available on the website, making this a very valuable resource. See also Boix Mansilla and Gardner, Hacking, Heintz and Origgi, Nowotny and Sperber.*

*Steve Fuller argues that disciplines are 'artificial holding patterns' of inquiry that can facilitate research and knowledge formation, but the significance of which should not be overestimated. For Fuller their utility has a temporality, they are a 'necessary evil' of knowledge-production, but one that has become somewhat over-bearing with their increasing institutionalisation within departments of universities and degree-provision post-1945. He argues that the success of the various disciplines we are familiar with is exactly due to this institutionalisation, relating to the flows of resources and development and provision of training, production of 'communities' and networks, and so forth. Fuller poses his contribution as a discussion around the philosophy of science, to which he adds a historical note through a discussion of its 'development'. He argues that we would benefit now from returning to a looser arrangement for knowledge-production, and discusses the promises and perils of the university's place as a space for promoting such.*

Garrow, D. and Shove, E. (2007a) 'Artefacts between disciplines. The toothbrush and the axe' in *Archaeological Dialogues* 14:2, 117-153.

Garrow, D. and Shove, E. (2007b) 'Artefacts between disciplines: responses to responses'.

Graves-Brown, P. (2007) 'Of Tribes and Territories'.

Hahn, H.P. (2007) 'Objects as Such and Objects in Contexts: Things and equipment'.

Knappett, C. (2007) 'Artefacts in Quarantine?'.

Molotch, H. (2007) 'Display Matters'.

*The principal article by Duncan Garrow and Elizabeth Shove listed above, along with several short responses and their 'response to responses' (all published in the same issue of the mentioned journal), together constitute an interesting reflection upon differences between sociology and archaeology, with some relevance to wider interdisciplinary theorizing.*

*\* Garrow and Shove's original article initiates a debate around how interdisciplinary ways of working might affect the study of, and understandings of, material culture; exploring something of the limitations of different disciplinary methodologies pursued on their own and the challenges posed by interdisciplinary dialogues, but also the potential productivity of engaging in such dialogues, even if only to clarify priorities and methodological concerns within one's own discipline (cf. Bruce, et al. 2004). The two authors lent each other an object of interest from their own disciplinary endeavours, which the other then had to engage with from their respective disciplinary perspective. The manner of approach taken in each case is outlined, as are the motivations for choosing each object, and the difficulties found in going beyond certain basic observations in each case.*

*\* Paul Graves-Brown draws upon Becher's characterisation of disciplines as being more 'rural' ('with a diversity of topics, methods and theories which are likely to overlap with other disciplines') or more 'urban' ('clustered tightly around specific methodologies and data') to argue for the strong common heritage and against the existence of strong boundaries between sociology and archaeology.*

*\* Hans Peter Hahn writes of 'material culture studies' as offering a new approach to several disciplines; and further refers to understanding other disciplines' methods as an option for enlarging one's own methodology.*

*\* Carl Knappet argues that Garrow and Shove's device (the placing of the axe and toothbrush) is an artifice – we most often encounter objects in situations of 'smooth coping', that is in environments where we experience them in their regularity and functionality, whilst Garrow and Shove placed their exchanged objects on desks in their offices, and thus transformed them into objects of reflection and discussion.*

*\* Harvey Molotch argues that objects in themselves remain under-examined within sociology, since sociologists instead look to the settings in which they exist or are used.*

*\* Garrow and Shove's response argues Andrew Abbott's case for much of the 'strength' of disciplines being accounted for by the social institutions around and within universities, which help to determine the market for ideas, people and so forth.*

Griffin, G., Medhurst, P. and Green, T. (2006) *Interdisciplinarity in Interdisciplinary Research Programmes in the UK*. Downloaded from [www.york.ac.uk/res/researchintegration] on 31/10/08.

*Part of an EU-funded project (2004-2007) 'Research Integration: Changing Knowledge and Disciplinary Boundaries Through Integrative Research Methods in the Social Sciences and Humanities'. See also Griffin, Medhurst and Green (2005).*

*Gabriele Griffin, Pam Medhurst and Trish Green open the paper in recognizing that promoting interdisciplinary working has been an EU priority*

*since the 5<sup>th</sup> Framework programme, but that at the time of publication interdisciplinarity was not clearly defined by Research Councils or university research programmes. They recognize that the Research Councils do seek, in their policy documents at least, to promote interdisciplinarity, but that there are no established means of post-award auditing for the pursuit of interdisciplinarity within funded projects.*

*A good literature review is presented which brings together a number of international authors in articulating the paper's authors' position on interdisciplinarity. The body of the work centres around two inter-Research Council interdisciplinary programmes (AHRC-ESRC and AHRC-EPSC), researchers from projects within which Griffin, et al. interviewed in order to gain knowledge of how the researchers perceived their own interdisciplinarity with regard to their endeavours on these projects.*

Griffin, G., Medhurst, P. and Green, T. (2005) *Disciplinary Barriers between the Social Sciences and Humanities. National Report on the UK*. Downloaded from [www.york.ac.uk/res/researchintegration] on 31/10/08.

*Part of an EU-funded project (2004-2007) 'Research Integration: Changing Knowledge and Disciplinary Boundaries Through Integrative Research Methods in the Social Sciences and Humanities'. See also Griffin, Medhurst and Green (2006).*

*In this paper, Gabriele Green, Pam Medhurst and Trish Green explain the workings of the UK university system for an international audience (pre- and post-92s and the balance of teaching and research between these, etc.), before outlining the diversity of organizational patterns of the organization of Social Sciences and Humanities subjects at Faculty-level within UK universities (using Sociology, English and History as examples). They argue that this diversity holds the potentiality for encouraging interdisciplinary working, but that research and teaching funding systems (the ESRC and AHRC) discourage this through their disciplinary focus (they explain the subtleties within this argument, as they existed under the ESRC and AHRB – the Arts and Humanities Research Board, the precursor to the AHRC).*

*The authors note that many newer disciplines, such as Women's or Gender Studies, were not at the time of publication recognized by either Council, and argue that competitiveness in the advancement of knowledge societies depends upon an openness to such cross-disciplinary developments. They then argue similarly regarding the Research Assessment Exercise (RAE). These arguments are usefully grounded in empirical research, and conclude with the assertion that market-driven restructuring can have seriously deleterious effects upon cross-disciplinary and newer disciplinary endeavours. Women's Studies and Continuing Education are at this point taken as two case studies and examined in greater depth. The paper serves as a substantial and well-argued contribution to discussions around the state-of-play of interdisciplinary studies in the UK.*

Hacking, I. (2003) 'The Complacent Disciplinarian'. Downloaded from [http://www.interdisciplines.org/interdisciplinarity] on 15/10/08.

*A paper that forms part of the seminar-series 'Rethinking Interdisciplinarity', which was supported by the Centre National de la Recherche Scientifique*

*(C.N.R.S.) project “Société de l’Information”. Some lengthy discussions have developed from the papers, which are all available on the website, making this a very valuable resource. See also Boix Mansilla and Gardner, Fuller, Heintz and Origgi, Nowotny and Sperber.*

*Ian Hacking here presents another loosely-framed discussion-starter. Hacking frames himself as an ‘interdisciplinary’ as simply one who is keenly interested in the world, and applies their skills without regard to the official boxes. In doing so he refers to Leibniz, Bourdieu and Mary Douglas as examples of this type, and without ever using the terms, frames his position closely to that of those who talk of pre- and postdisciplinarity (cf. Sayer 2001, Jessop & Sum 2001). He argues that people should not try to be faithful disciplinarians or endeavour to work interdisciplinarily, but rather should just pursue their areas of interest to wherever they may lead. In doing so he interestingly and usefully tries, it would seem, to downsize the idea of interdisciplinarity, it being simply what some people do. As the title states, Hacking openly acknowledges, and light-heartedly apologises for, what he recognises that some might regard as a seemingly complacent take upon interdisciplinarity.*

Heintz, C. and Origgi, G. (2003) ‘Rethinking Interdisciplinarity. Emergent Issues’. Downloaded from [<http://www.interdisciplines.org/interdisciplinarity>] on 15/10/08.

*A paper that forms part of the seminar-series ‘Rethinking Interdisciplinarity’, which was supported by the Centre National de la Recherche Scientifique (C.N.R.S.) project “Société de l’Information”. Some lengthy discussions have developed from the papers, which are all available on the website, making this a very valuable resource. See also Boix Mansilla and Gardner, Fuller, Hacking, Nowotny and Sperber.*

*Christophe Heintz and Gloria Origgi present here a summary of the Interdisciplines.org plenary thus far and attempt to trace some of the emergent issues from the papers and discussions. They pinpoint the main recurring themes and speak a little of the discussions that have occurred; they then further reflect upon the nature and role of interdisciplinary research in an information society, asking how the Internet might be changing interdisciplinary research. They take the position that the Internet has facilitated ‘soft assembled’ research communities, reducing the costs of assembling and locating groups of researchers with similar or productively different interests. They postulate that the increasing use of search engines by researchers could begin to shift how research is classified. This piece acts as a good introduction to the debates that have occurred within the Interdisciplines.org environment, and acts as a pointer to discussion issues that could be missed were one to simply read the papers placed online and not pay attention to the discussions listed to the right-hand side of each paper.*

Hersch, M. and Moss, G. (2004) ‘Heresy and Orthodoxy: Challenging established paradigms and disciplines’ in *Journal of International Women’s Studies* 5:3, 6-21.

*In this paper Marion Hersch and Gloria Moss present the findings of two questionnaires completed by male and female researchers conducting interdisciplinary work, as well as a discussion of the relevance of one’s gender to one’s displaying a tendency towards interdisciplinarity, and issues*

*of heresy and orthodoxy in relation to interdisciplinarity. Following some discussion of the interdisciplinary nature of women's studies, Hersch and Moss move on to explain the surveys they conducted, and then discuss their findings. They note that more women than men would appear to be involved in interdisciplinary research (they reflect upon various gender studies arguments as to why this could be so), and also emphasise that 'personal interdisciplinarity' is important alongside interdisciplinary collaboration with colleagues in producing effective interdisciplinary work. The surveys gained only a small number of respondents, which the authors readily admit limits the significance of their findings, but they conclude in hoping to extend the study further.*

Horlick-Jones, T. and Sime, J. (2004) 'Living on the Border: knowledge, risk and transdisciplinarity' in *Futures* 36:4, 441-456.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Bruce et al., Després et al., Klein, Lawrence & Després, Pinson and Ramadier.*

*Tom Horlick-Jones and Jonathan Sime here present themselves as being interested in 'border work' between disciplines and between scholarship and practice. As such, the paper takes an understanding of 'transdisciplinary research' as real-world problem-focussed, and treats it as the generic catch-all for interdisciplinary and transdisciplinary research, separating out multidisciplinary in the regular fashion (non-integrative research between disciplines). The paper focuses upon risk, and differing social science, as well as engineering and 'hard science' understandings, of risk.*

Jessop, B. and Sum, N.L. (2001) 'Pre-disciplinary and Post-disciplinary Perspectives' in *New Political Economy* 6:1, 89-101.

*An interesting think-piece around developments in political economy, but with strong relevance to disciplinary developments more widely. Bob Jessop and Ngai-Ling Sum begin by stating that they associate, respectively, as pre- (Marxism) and post- (Cultural Studies) disciplinary, neither identifying with a single discipline. They then refer to 'intellectual developments' (such as the rise of transdisciplinary fields like cultural studies and the entry of new types of scholar into previously predominantly white middle-class disciplines) that have led to, they argue, a complexification of politics and area studies. This leads on to a consideration of political economy's position as an arguably inherently interdisciplinary venture and the contention that the need is there for a turn towards a 'cultural political economy', so as to facilitate considerations of the importance of the power of discourse, the politics of identity/difference, and the 'contextuality and historicity' of any political economy frameworks of understanding.*

Jones, P. and MacDonald, N. (2007) 'Getting It Wrong First Time: Building an interdisciplinary research relationship' in *Area* 39:4, 490-498.

*A paper considering debates around 'interdisciplinary' work between physical and human geography. Phil Jones and Neil MacDonald, a human and a physical geographer respectively, make the point relevant to all interdisciplinary work that being able to work together, make mistakes and*

*learn from them is an essential part of the process of the endeavour. As part of this collaborative endeavour, they refer to Nigel Thrift's (2002) emphasis upon the importance of developing trust relationships in undertaking effective interdisciplinary research. In seeking to publish from their project, they note the problems encountered in having the work recognised by disciplinary journals (particularly those located in physical geography). They acknowledge that their work was in a sense more multi-, or even mono-disciplinary in its end-products, but defend the process as having been a very valuable learning curve that researchers seeking to conduct interdisciplinary work will need to go through.*

Klein, J.T. (2006) 'Resource Review: Resources for Interdisciplinary Studies' in *Change*, March/April 2006.

*A 6-page summary of a large number of online and offline resources for the pursuit and review of interdisciplinary work, with an emphasis upon works published in the 10 years preceding the article's publication. Although Julie Thompson Klein states that the piece is looking internationally, the focus is heavily American. It is nonetheless included here because it provides an excellent mapping of recent interdisciplinary endeavours in the USA and Canada.*

Klein, J.T. (2004) 'Prospects for Transdisciplinarity' in *Futures* 36:4, 515-526.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Bruce et al., Després et al., Horlick-Jones & Sime, Lawrence & Després, Pinson and Ramadier.*

*Julie Thompson Klein writes of the international scene for transdisciplinarity, usefully describing aspects of developments in other European countries and beyond. The article acts in the style of an introduction to the issue at points, drawing links between other articles in the piece and serving as a reflection upon the issue's contents.*

Laudel, G. (2006) 'Empowering Applicants. Conclave in the Tower of Babel: how peers review interdisciplinary research proposals' in *Research Evaluation* 15:1, 57-68.

*A contribution from an Australian colleague to a UK publication, arguing that one particular approach to the peer review process as collective knowledge construction could alleviate some of the stresses of compiling interdisciplinary grant proposals to go before multidisciplinary review boards. Grit Laudel opens the article by gathering some published research evidence of the tendency of review boards to prefer non-interdisciplinary work, something that is spoken of widely but goes largely unreferenced. He then argues around peer review being a process of collective, negotiated knowledge construction wherein institutions and actor-groupings play a central role. He presents a step-by-step analysis of the peer review process, arguing that time and learning processes are two of its fundamental features. The author argues against the positions of those such as Klein and Boix Mansilla, who contend that new assessment criteria are required for reviewing interdisciplinary research proposals and work. Instead, Laudel maintains that it is simply a matter of time and the learning process that reviewers must undergo. Together*

*with the work of the two mentioned authors, this provides for an interesting debate around the central issue of how research proposals, and findings, are reviewed.*

Lawrence, R. and Després, C. (2004) 'Introduction: Futures of Transdisciplinarity' in *Futures* 36:4, 397-405.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Bruce et al., Després et al., Horlick-Jones & Sime, Klein, Pinson and Ramadier.*

*Roderick Lawrence and Carole Després here state their belief that transdisciplinary endeavours should emerge more easily from more 'multidisciplinary' disciplines such as architecture and planning, before outlining four key characteristics of transdisciplinarity: tackling knowledge complexity and challenging its fragmentation; context-specificity; intercommunicative action, requiring close and continuous collaboration, and action-orientedness, connecting with wider society, although they emphasise that it should not be seen as being entirely and always action-oriented. They then briefly summarise some of the different understandings of multi-, inter- and trans- emergent from contributions to this special issue of the journal.*

Nowotny, H. (2003) 'The Potential of Transdisciplinarity'. Downloaded from [<http://www.interdisciplines.org/interdisciplinarity>] on 15/10/08.

*A paper that forms part of the seminar-series 'Rethinking Interdisciplinarity', which was supported by the Centre National de la Recherche Scientifique (C.N.R.S.) project "Société de l'Information". Some lengthy discussions have developed from the papers, which are all available on the website, making this a very valuable resource. See also Boix Mansilla and Gardner, Fuller, Hacking, Heintz and Origgi and Sperber.*

*Helga Nowotny argues that knowledge and expertise are inherently transgressive, and that transdisciplinary research is inherently about transgressing boundaries; disciplines still exist, but new ones continue to arise and can be actively produced from interdisciplinary work. She refers to her earlier research with Gibbons, et al. (1994) around Mode 1 and Mode 2 understandings of knowledge, and argues that Mode 2 knowledge is transdisciplinary rather than multi- or inter-disciplinary. In relation to this point it is contended that interdisciplinarity can contribute to the production of more socially robust knowledge (knowledge that has standing and gains respect from the wider public). Transdisciplinarity, Nowotny argues, responds to a need (a loss of a felt unity of knowledge) and a belief (that transdisciplinary research and knowledge can be more than the sum of its parts); and further that transdisciplinary research requires patience above all else. Developing transdisciplinary research projects, and working to produce transdisciplinary knowledge, all takes time. Two key issues for transdisciplinarity, she argues in concluding, centre around questions of accountability and quality control.*

Pinson, D. (2004) 'Urban Planning: An 'undisciplined' discipline?' in *Futures* 36:4, 503-513.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Bruce et al., Després et al., Horlick-Jones & Sime, Klein, Lawrence & Després and Ramadier.*

*Daniel Pinson writes around how Urban Planning is a multidisciplinary affair, and argues that fields need to develop strong enough disciplinary identities before they can productively engage in transdisciplinary work. He argues the same lines that transdisciplinarity moves beyond interdisciplinarity and can involve the renegotiation and redrawing of disciplinary boundaries, and that transdisciplinarity not only allows for new ways of solving problems, but of new ways of perceiving, framing and defining problems (cf. Barry, Born & Weszkalnys 2008, Weszkalnys 2006).*

Ramadier, T. (2004) 'Transdisciplinarity and its Challenges: the case of urban studies' in *Futures* 34, 423-439.

*Taken from a special issue of the journal 'Futures', which focussed upon understandings of, and issues surrounding the practice of, transdisciplinarity. See also Balsiger, Bruce et al., Després et al., Horlick-Jones & Sime, Klein, Lawrence & Després and Pinson.*

*Thierry Ramadier here argues that the division of fields of scientific enquiry eventually leads back to the linking up of different disciplinary fields. He deploys some different terms to the standard UK research, speaking of mono- and pluridisciplinarity, indicating certain lexical differences between British and French writings in the field. The paper contains some interesting attempts to articulate a philosophy of transdisciplinarity, drawing on poststructuralist approaches and arguing that complexity can only be approached through transdisciplinarity. Ramadier also usefully explains a little of the state and nature of transdisciplinary research in France.*

Sayer, A. (2001) 'For Postdisciplinary Studies: Sociology and the Curse of Disciplinary Parochialism/Imperialism' in J.Eldridge, J.MacInnes, S.Scott, C.Warhurst and A. Witz (eds.) *For Sociology: Legacies and Prospects*. Durham: Sociologypress.

*An interesting and thought-provoking argument- and think-piece. Andrew Sayer argues that disciplines are parochial, providing all-purpose filters that impede progress, and furthermore imperialist, referring to economics and geography and the tendency of disciplines towards seeking to universalise their mode of understanding to other realms; 'disciplines represent an evolutionary cul-de-sac' in social science's development, such that 'we should undiscipline ourselves'.*

*Sayer refers to class-bias within academic disciplines and contends that if academics are to be reflexive, they must be aware of this and refuse to allow their judgements of shifts in scholarship to be influenced by their origin. He contends that a postdisciplinary approach allows researchers to follow ideas wherever they may lead, and to focus upon learning. Finally, he refers to the temporality of discourses, to the transdisciplinarity of those we consider the founders of disciplines (e.g. Adam Smith), and states clearly that 'to discipline a Marx or a Foucault is to diminish them'.*

Schoenberger, E. (2001) 'Interdisciplinarity and Social Power' in *Progress in Human*

*Geography* 25:3, 365-382.

*Erica Schoenberger is a US academic here writing in a UK-based journal. She considers in this article how different disciplines have different subjects, methods and places of study, working further into differences in language, senses of meaning, and cultures. It is this last point (cultures) that concerns much of the article. Social power questions in relation to disciplines and interdisciplinarity lead Schoenberger to an important question: who is interested in interdisciplinarity and why? She considers firstly academics she admires who are of their nature somewhat interdisciplinary, but who also seek to protect disciplinary structures for their ability to foster younger scholars. She then ruminates around sources of funding, the interests of industry and governmental concerns with national competitiveness, emphasising that interdisciplinarity is therefore both promising and dangerous – researchers need to ensure that they are seen to be doing research for the ‘right’ reasons and not simply for the money. She concludes that the safest solution in this regard is for scholars to be proactive in creating the interdisciplinary projects they wish to pursue and arguing for their funding, rather than simply responding to defined funding calls.*

Shove, E. and Wouters, P. (2005) ‘Interdisciplinarity workshop discussion paper’, paper presented at *Interactive Agenda Setting in the Social Sciences*, workshop 3, *Interdisciplinary Fields and Fashions: making new agendas*. Downloaded from [<http://www.lancs.ac.uk/fass/projects/iass/index.html>] on 1<sup>st</sup> November 2008.

*This paper is one of many different and interesting resources available on the listed site, presenting materials from a workshop series around interactive agenda-setting, but with a small number of workshops looking at the role and place of disciplines and interdisciplinarity within this endeavour.*

*The paper constitutes a good brief critical review of perspectives on the values of interdisciplinarity. Elizabeth Shove and Paul Wouters take the line that ‘the most frequently cited arguments in favour of interdisciplinarity are fundamentally flawed’ (p.4), and cite Weingart and Stehr’s *Practising Interdisciplinarity* (2000) in support of this contention, holding that interdisciplinarity is promoted as a way of creating new opportunities for researchers and funders.*

Sperber, D. (2003) ‘Why Rethink Interdisciplinarity?’. Downloaded from [<http://www.interdisciplines.org/interdisciplinarity>] on 15/10/08.

*A paper that forms part of the seminar-series ‘Rethinking Interdisciplinarity’, which was supported by the Centre National de la Recherche Scientifique (C.N.R.S.) project “Société de l’Information”. Some lengthy discussions have developed from the papers, which are all available on the website, making this a very valuable resource. See also Boix Mansilla and Gardner, Fuller, Hacking, Heintz and Origgi and Nowotny.*

*Dan Sperber reflects upon the need for interdisciplinary research networks to facilitate connections and encourage new researchers. Sperber also reflects upon the dangers of interdisciplinarity being deployed in an opportunistic manner (methodically responding to funding possibilities, etc, more than pursuing interesting possibilities for new collaborations). He postulates that this might be becoming easier courtesy of the Internet and consequent*

*networking. He then notes that one current problem is that everything (resources, training, qualifications and so career paths) is channelled through disciplinary structures (within universities). Sperber postulates that the growth of interdisciplinary research may be a symptom of an increasing brittleness in disciplinary structures, brought about through shifts in contemporary modes of knowledge-production and sharing.*

Strathern, M. (2006) ‘A community of critics? Thoughts on new knowledge’. Huxley Memorial Lecture, Royal Anthropological Institute, London’, in *Journal of the Royal Anthropological Institute*, 12: 191-209.

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Weszkalnys (2006).*

*The paper expounds Marilyn Strathern’s position on multidisciplinary and interdisciplinarity. Interdisciplinarity is, as she says, about crossing boundaries and hoping to develop a pidgin-language, to develop a workable mutual understanding; whilst multidisciplinary is a simpler means of co-working within one’s own frame and language. She refers again to the problems in measuring the value of interdisciplinary research, and contrasts what she terms a ‘management model’ with a ‘research model’ of knowledge creation, arguing that the management model which dominates through exercises such as the RAE steer us away from the production of useful and interesting knowledge and questions for further research. Strathern finally comments here on the value of an agonism between disciplines that are brought together in interdisciplinary research, as against any synthesis-consensus model, which would be less productive (cf. Barry, et al. 2008).*

Strathern, M. (2005a) ‘Experiments in interdisciplinarity’, in *Social Anthropology* 13(1), 75-90.

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Weszkalnys (2006).*

*Another paper around Marilyn Strathern’s placement as an ethnographer in the Cambridge Genetics Knowledge Park. The author firstly produces an interesting analysis of the meanings and significance surrounding the name of the CGKP (the ‘knowledge park’ aspect), before considering problems relating to a lack of recognized measures for interdisciplinary research. She suggests that levels of information-sharing could be used as one such measure, since this is instrumental to the purposes of conducting such research. Emphasising the duality of the roles of knowledge-production and information or knowledge-sharing is an interesting contribution to discussions around the role and utility of interdisciplinary research.*

Strathern, M. (2005b) Anthropology and interdisciplinarity. *Arts and Humanities in Higher Education* 4, 125-135.

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural*

*sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Weszkalnys (2006).*

*The paper presents a conversation between Professors Marilyn Strathern and Ludmilla Jordonova, which centres around how Strathern positions herself with regard to disciplines and interdisciplinarity. Interdisciplinary research, Strathern argues, requires a self-consciousness and reflexivity about the ability (and difficulties, and limits to the ability) to mix knowledges. She argues that interdisciplinary research is a generic approach/tool to address the problems lying 'athwart' specialisms. Interdisciplinary research stands for other values, it is an End and not just a Means; as such, one should expect to find resistance when one is working in an interdisciplinary manner, as one tests the limits and understandings of various fields.*

Strathern, M. (2004a) *Commons and Borderlands: Working Papers on Interdisciplinarity, Accountability, and the Flow of Knowledge*. Oxford: Sean Kingston.

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Weszkalnys (2006).*

*Four papers exploring aspects of interdisciplinary knowledge, its production processes, institutions and corresponding societies. The book works as a response to and development around Gibbons, et al.'s (1994) *The New Production of Knowledge*, as well as the CNRS-supported Interdisciplines.org seminar series. As such, Marilyn Strathern devotes some time to exploring understandings of Mode 1 and Mode 2 knowledge, the communities that these can grow from, and the societies to which they could be held accountable. A very interesting contribution to theoretical discussions around interdisciplinarity which is grounded by Strathern's own anthropological research and cross-referencing with significant new Science and Technology Studies writings.*

Strathern, M. (2004b) 'Laudable aims and problematic consequences: Or the "flow" of knowledge is not neutral', in *Economy and Society* 33(4), 550-561.

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Weszkalnys (2006).*

*An article which draws strongly on the same material used in writing Strathern (2004a) and extends some lines of argument. Marilyn Strathern poses a hypothetical problematic of anthropology losing its place at the interdisciplinary research table by seeming to be too off-beam and musing in its desire to contextualise; and finding its research terrain curtailed through each discipline being seen to have its 'own' areas of expertise, where anthropology necessarily locates itself within many terrains. She posits in this vein the notion that a surfeit of 'society' and conceptualizations of 'the social' could drain energy and standing from the social sciences, since 'what is ubiquitous requires no special understanding'.*

Strathern, M. (2004c) 'Social property: An interdisciplinary experiment', in *PoLAR*

*(Political and Legal Anthropology Review) 27, 33-50.*

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Weszkalnys (2006).*

*Another article drawing on materials related to those used in writing Strathern's (2004a) Commons and Borderlands. As with much of Marilyn Strathern's work listed here, the writing is very interesting, but the focus is more around the potential meetings of natural sciences with social sciences, and arts and humanities, rather than intra-social science interdisciplinary endeavours. The article explores something of her position working as an anthropologist in the Cambridge Genetics Knowledge Park. She postulates how such knowledge parks were originally established to bring a new authority to particular sciences, by mixing scientific and non-scientific knowledges, and thereby constructing more socially robust knowledge. Strathern considers the complexities in seeking to encourage disciplines to cross-communicate, emphasising the differences in language, standards of knowledge 'proof', etc, and the additional complexities of then factoring in dialogue with 'the public' (as an abstract form).*

Tait, J. and Lyall, C. (2007) 'Short Guide to Developing Interdisciplinary Research Proposals'. ISSTI Briefing Note (Number 1). Edinburgh: Institute for Science, Technology and Innovation.

\* Lyall, C., Bruce, A., Tait, J. and Meagher, L. (2007) 'Short Guide to Reviewing Interdisciplinary Research Proposals'. ISSTI Briefing Note (Number 2).

\* Lyall, C. and Meagher, L. (2007) 'A Short Guide to Building and Managing Interdisciplinary Research Teams'. ISSTI Briefing Note (Number 3). *These papers were downloaded from the Institute for the Study of Science, Technology and Innovation (ISSTI) website, located at the University of Edinburgh [http://www.issti.ed.ac.uk].*

*The briefing notes listed here do not develop interdisciplinary research theory in any significant way; rather, they act as excellently-written summaries of the practicalities to be considered in starting out with the intention to conduct such. They outline understandings of a range of terminology and provide practical advice to researchers and funders, with the intention of helping to foster interdisciplinary cultures within universities and other research organisations.*

*Joyce Tait and Catherine Lyall take the recognised understanding of interdisciplinary research as the coming together of various disciplines to produce integrated, 'holistic or systemic' results and outcomes, as in their Bruce, et al. (2004) Futures paper. They further recognise that not all interdisciplinary research is problem-oriented, some being intended to extend and develop the expertise or remit of academic disciplines. They emphasise the work that will be required in seeking to build interdisciplinary research teams, speak of the possible problems to be faced and the skills that will be required of the team, and of the considerations to be made by reviewers of interdisciplinary research proposals, articles and end-reports. A much-needed*

*practical contribution to the field that could hopefully facilitate useful interdisciplinary work.*

Tait, J. and Lyall, C. (2001) *Final Report: Investigation into ESRC-Funded Interdisciplinary Research*. University of Edinburgh: SUPRA.

*A paper presenting findings from a short-term investigation into ESRC-funded interdisciplinary research, to examine how ESRC practices encourage or discourage interdisciplinarity. The report found no evidence of ESRC practices discouraging interdisciplinary research, but rather a lack of direction in its encouragement. The main barriers were seen to be the disciplinary culture within universities, and the Research Assessment Exercises (RAEs). The ESRC was not felt to be taking effective action to counter or redirect these inhibiting factors. Joyce Tait and Catherine Lyall comment upon the weaknesses of strategies for measuring both the levels and the quality of interdisciplinary research that is going on, and advise that better measures need to be developed. They argue that there is a need to allow more time for networking and developing Interdisciplinary research ideas, proposals and methodologies from the outset. The paper finally provides shorter- and longer-term ideas for how the ESRC could usefully encourage greater levels and better qualities of interdisciplinary research.*

Thrift, N. (2002) 'The Future of Geography' in *Geoforum* 33, 291-298.

*As Nigel Thrift himself states, this article presents a 'quasi-polemical' reflection on the current state of, and possible futures for, geography. Some of these ruminations stem from the ascendancy of the discourse of interdisciplinarity and hence Thrift's reflections find relevance here. He begins by summarising several successes of the discipline, including natural geography's building research links with natural scientists; human geography's 'spatial turn', which builds its relevance and visibility across the social sciences; the adoption of qualitative methods such as ethnography from neighbouring disciplines, and strengthening quantitative methods, which all develop and expand the discipline's methodological capacities; and a shift towards contributions and interventions in public policy (which we could here read as developments in Mode 2 knowledge production). He then outlines problems in the same manner; firstly that human and natural geography are growing apart, and further a lack of willingness in some parts to engage interdisciplinarily. Thrift's position on this point is that a discipline improves itself by exposure to 'competition' from other disciplines.*

Turner, B.S (2006) 'Discipline' in *Theory, Culture and Society* 23, 183-186.

*A short think-piece, Bryan Turner contends that the rise and fall of disciplines have often been produced by changes in the national culture, and that disciplines are important in any national project. However the growing hybridity of national cultures, and the increasing association of universities as adjuncts of the economy rather than any grander 'project', he argues, have left intellectuals with the knowledge that all views and opinions are necessarily partial – and that disciplines are socially-constructed artifices. He then draws in arguments around globalization and decolonisation to consolidate and extend his argument.*

Weszkalnys, G. (2006) *Mapping Interdisciplinarity: Report of the survey element of*

*the project 'Interdisciplinarity and Society: A Critical Comparative Study', ESRC Science in Society programme, 2004-06.*

*This article is a product of an ESRC-funded project, Interdisciplinarity and Society (2004-6), looking at collaborations crossing between the natural sciences and engineering, and the social sciences and arts. See also Barry, Born and Weszkalnys (2008) and Strathern (various).*

*A comprehensive outline of the undertakings of the project, detailing the selected methodological tools and approaches, the theoretical approaches the researchers began from, and an outline of findings and the various typologies that were developed and applied in their analysis. As stated, the project did not look at intra-social-science interdisciplinary research as such, but rather a number of crossovers between natural and social sciences, and arts and humanities. Gisa Weszkalnys' report contains some reflections upon how 'interdisciplinarity has become increasingly salient as a term of self-description, a mode of research, and an issue to reflect upon' (p.28), and raises some questions around the nature of the 'institutions' engaging in interdisciplinary research in the age of the Internet, where an 'institution' can in fact be a virtual assemblage of disparate actor-networks rather than a bricks and mortar affair. This, it is argued, can change the terms of being of any such interdisciplinary research, and questions as to the value of being able to regularly meet to discuss and so forth, need to be kept in mind with regard to the 'inter-' qualities of such research.*

## Environment

Ackerman, F. (2004) 'Priceless Benefits, Costly Mistakes: What's Wrong With Cost-Benefit Analysis?' in *Real World Economics Review* 25. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

*The Real World Economics Review [www.paecon.net], formerly the post-Autistic Economics Review, is an endeavour to 'expose some of the many conceptual lunacies of today's mainstream [economics], both in terms of the concepts it uses and the concepts it lacks'. In so doing, its contributors draw upon other thinking, and thereby other disciplinary perspectives and understandings. See also Bakshi (2004), Constanza (2003), Daly (2003), Edney (2005a and 2005b) and Green (2005). In this way, contributions to the Real World Economics Review could be positioned as Mode 1 Interdisciplinary pieces, as framed by Bruce, et al. (2004) above.*

*A paper arguing for the failure of Cost-Benefit Analysis (CBA) in key areas to which it has been applied in government policy, namely health and environmental protection. Frank Ackerman argues that this represents 'an implausible process of monetization of priceless benefits', critiquing environmental economists' tendencies to do exactly this. He further contends that the process of discounting is an implausible practice in these regards in that it effectively asserts that future health and environmental concerns are of less concern than the short-term benefits that are gained through pursuing environmentally destructive activities. In his conclusion he advocates for a more precautionary approach.*

Bakshi, R. (2004) 'Gross National Happiness' in *Real World Economics Review* 26. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

*Rajni Bakshi's paper argues for the take-up of the idea of a measure of Gross National Happiness (GNH), first propounded by the King of Bhutan. This is another attempt to extend economic discursive practices beyond restrictive understandings of Gross National and Domestic Product (GNP/GDP), as with the New Economics Foundations' Measure of Domestic Progress (MDP) and their Happy Planet Index (see Jackson 2004 and Marks, et al. 2006). See also Ackerman (2004), Constanza (2003), Daly (2003), Edney (2005a and 2005b) and Green (2005); see Ackerman (2004) for an outline of the Real World Economics Review.*

Bowen-Jones, E., Brown, D., Robinson, E.J.Z. (2003) 'Economic commodity or environmental crisis? An interdisciplinary approach to analysing the bushmeat trade in central and west Africa' in *Area* 35:4, 390-402.

*A focused article arguing that an interdisciplinary approach is needed to evaluate the economic, biological and institutional factors of the bushmeat trade. Evan Bowen-Jones, David Brown and Elizabeth Robinson argue that there are few examples of interventions to make the trade more sustainable, because such interventions have not covered all aspects of demand and all stages of supply in the trade. What is required, they argue, is an interdisciplinary 'commodity chain' approach that could look at all factors involved and consider variations in inputs and outcomes in various parts of a complex system.*

Constanza, R. (2003) 'Ecological Economics is Post-autistic' in *Real World Economics Review* 20. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

*This paper argues that Ecological Economics is a transdisciplinary effort to link ecology and economics, amongst other social and natural sciences, and that it constitutes, or could in time constitute, a new 'metaparadigm' for research and thinking around environmental-ecological-developmental concerns, policy and practice. Robert Constanza argues for the interdependence of ecological, social and economic sustainability. See also Ackerman (2004), Bakshi (2004), Daly (2003), Edney (2005a and 2005b) and Green (2005); see Ackerman (2004) for an outline of the Real World Economics Review.*

Daly, H. (2003) 'The Illth of Nations and the Fecklessness of Policy: □An Ecological Economist's Perspective' in *Real World Economics Review* 30. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

*Herman Daly here works to develop a notion of 'illth' as a framing counterpart to our more common understandings of 'wealth', in arguing that our current economic problems (poverty, overpopulation, unemployment, unjust distribution) become more difficult rather than less, with economic growth. The paper expounds upon a central point of much of Daly's work, which is that our containing system (planet Earth) is a system of fixed and limited capacities, and so the notion of unending economic growth is necessarily a fantasy, given that the economy is a subsystem of our containing system. Criticises the excess of determinist and nihilist attitudes in policy-making circles and argues that we need to refuse these positions in order to engage in constructive policy-formation to deal with the need to reconceived our economic understandings and so grapple with our ecological and social problems. See also Ackerman (2004), Bakshi (2004), Constanza (2003), Edney (2005a and 2005b) and Green (2005); see Ackerman (2004) for an outline of the Real World Economics Review.*

Edney, J. (2005a) 'Greed (Part 1)' in *Real World Economics Review* 31. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

(2005b) 'Greed (Part 2) in *Real-World Economics Review* 32. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

*Julian Edney's two papers present an attempt at a damning critique of free-market economics. Part 1 presents reflections upon the growing and grave inequalities within US society. Part 2 considers differences between cultures, suggesting that Western 'free'-market economies are shifting our cultures towards more competitive rather than cooperative ways of being. He attacks his understanding of 'Smithian' economics, that is, the writings of Adam Smith, as being the founding stones of our contemporary economic situation, as legitimating inequality and greed through ideas of wealth, once created, trickling down to those without. He then in passing dismisses environmental concerns as a distraction from the damage that 'people do to people' contending that it is inequalities and not environmental damage that are the greatest inhibitor of a good life for all. See also Ackerman (2004), Bakshi (2004) Constanza (2003), Daly (2003) and Green (2005); see Ackerman (2004) for an outline of the Real World Economics Review.*

Elliott, L. et al. (2008) *A Green New Deal*. London: New Economics Foundation.

*Most works from the New Economics Foundation [www.neweconomics.org] are not so much interdisciplinary as seeking to expand and reconceive economic (and political) discursive practices through consideration of environmental, social and development factors. In this way, contributions to the New Economics Foundation could be positioned as Mode 1 Interdisciplinary pieces, as framed by Bruce, et al. (2004) above. They present a valuable focus on 'joined-up thinking' re: markets, states, civil society and the ecosystem. They present challenging political think-(and do)-pieces which could usefully promote more interdisciplinary research around the areas of concern, as well as contributing towards the expansion and rethinking of the mainstream of economic discourse. See also Jackson (2004), Marks, et al. (2006) and Simms (2002) below.*

*A paper proposing a 'Green New Deal', in the style of Roosevelt's original New Deal, but working around contemporary concerns with environmental, developmental, social and fiscal concerns. Larry Elliott and colleagues in the Green New Deal Group (a gathering of leading names in the field, including Tony Juniper, Charles Secrett, Ann Pettifor and Caroline Lucas) write around the 'triple crunch' (financial, climate and global energy) in arguing for the need to review the workings and regulation of the financial system, and to engage a transformational programme to move us away from our dependence upon fossil fuels in a manner which could also make positive contributions to ameliorating unemployment problems and acting on global debt issues.*

Evans, R. and Marvin, S. (2006) 'Researching the Sustainable City: three modes of interdisciplinarity' in *Environment and Planning* 38, 1009-1028.

(2004) 'Disciplining the Sustainable City: Moving Beyond Science, Technology or Society?', paper presented at *The Resurgent City* conference, LSE, 19-24 April 2004.

*A reflection upon the difficulties, and a query around the value, of pursuing strongly interdisciplinary research, with regard to the end-uses to which research might be put. This paper reviews the UK Research Councils attempts to enact research around 'the sustainable city', and in so doing to engage in and encourage interdisciplinary research, through the 1990s. The councils principally concerned are the Economic and Social Research Council (ESRC), the Engineering and Physical Sciences Research Council (EPSRC), the Science and Engineering Research Council (SERC), the Natural Environment Research Council (NERC), and the formation of the Local Authority Research Council Initiative (LARCI).*

*Robert Evans and Simon Marvin argue that the Research Councils started out with radical ideals, but that once they began to define the issues of the 'sustainable city' within their own frames of reference, the interdisciplinary research that began to emerge tended to happen within the Research Councils' own respective fields ('cognate interdisciplinarity', for instance, different social sciences working together – 'cognate collaborations that emphasised either science or technology or society') rather than between their areas of concern (a more 'radical interdisciplinarity' whereby, for example, sociologists would work alongside physicists – 'radical proposals to research*

*the city as a complex combination of science and technology and society’). They then question whether this is actually a bad thing, arguing that the loss of levels of certainty within interdisciplinary research mean that results from such studies may not be commensurate with the desires or needs of policy-makers and other potential end-users. As such, they consider, perhaps the move away from the initially desired radical interdisciplinarity, towards its more mild-mannered cognate cousin, produced more immediately useable, and therefore useful, end-results.*

*They further write a little around the idea of a third kind of interdisciplinarity emergent from the felt responsibility to make connections between the research programmes and the end-users of the knowledge produced. This approximates something of the idea of Mode 2 knowledge, but here Evans and Marvin propose that ‘a new class of experts or intermediaries – knowledge brokers’ (p.1027) could be emergent, and could play a central role in this development.*

Green, T. (2005) ‘Tackling greed while recognizing ecological limits: A reply to Edney’ in *Real World Economics Review* 32. Downloaded from [www.paecon.net] on 1<sup>st</sup> November 2008.

*Tom Green’s response to Julian Edney’s two papers listed above (Edney 2005a and 2005b). Green argues that Edney’s contribution signifies some of the worse outcomes of poorly informed attempts at interdisciplinary work, constructing a ‘straw man’ version of ecological scarcity arguments which he then attacks, and drawing upon sources from inappropriate fields/disciplines in order to do so, that is a philosopher and a statistician, rather than the many environmental scientists whose work he could have drawn upon, who would have been far more relevant, but who would have undermined some of the central premises of his arguments. See also Ackerman (2004), Bakshi (2004), Constanza (2003), Daly (2003) and Edney (2005a and 2005b); see Ackerman (2004) for an outline of the *Real World Economics Review*.*

Harvey, D.R. (2006) ‘RELU Special Issue: Editorial Reflections’ in *Journal of Agricultural Economics* 57:2, 329-336.

*Taken from a special issue of the *Journal of Agricultural Economics* assessing the interdisciplinary, inter-Research Council Rural Economy and Land Use (RELU) research programme. See also Marzano et al., Philipson & Lowe, Tiffin, Traill & Mortimer and Waterton Norton & Morris.*

*In this introductory piece David Harvey talks of RELU’s shift in emphasis from ‘solving... challenges’ to ‘building interdisciplinary research capacity to take on these challenges’ (p.330). He speaks of the lessons being learnt from the programme about the need for carefully coordinated management of such strongly interdisciplinary work, and the need to keep expectations realistic and to allow time for the development of results. Harvey outlines the standard approach to multi- and interdisciplinarity, analogising interdisciplinarity to hybridization between species. He emphasizes the need for a common language and so an agreed methodology, and that he sees participation as being critical to interdisciplinary research, as well as discussing a little the problems of peer review in interdisciplinary research.*

Jackson, T. (2004) *Chasing Progress: beyond measuring economic growth*. London:

New Economics Foundation.

*A short paper in which Tim Jackson argues for moving from measuring Gross Domestic Product (GDP) to employing a newly-conceived composite Measure of Domestic Progress (MDP), which would factor in for the environmental and social costs of growth. The paper presents a challenging reflection upon the poverty of the accepted measures of wealth and the dangers of living by 'the myth of economic progress' (p.4). Jackson refers in passing to Bhutan's Gross National Happiness measure of development that Bakshi (2004) writes more around (see above). See also Elliott et al. (2008), Marks et al (2006) and Simms (2002); see Elliott (2008) for an outline of the New Economics Foundation.*

Marks, et al. (2006) *The (un)Happy Planet Index: An index of human well-being and environmental impact*. London: New Economics Foundation.

*This paper presents an argument for rethinking our ways of measuring and comparing countries' success, looking at ways of measuring a country's success in supporting 'a good life' for its citizens and respecting environmental considerations. Nic Marks presents the Happy Planet Index (HPI) as a measure which would aim to show the ecological efficiency with which human well-being was delivered. Such arguments aim to chip away at the hegemonic positioning of the short-termist and narrowly conceived measures of growth and progress within economic discourse, drawing in considerations from other disciplines such as ecology, geography, sociology and politics. See also Elliott et al. (2008), Jackson (2004) and Simms (2002); see Elliott (2008) for an outline of the New Economics Foundation.*

Marzano, M., Carss, D.N., and Bell, S. (2006) 'Working to Make Interdisciplinarity Work: investing in communication and interpersonal relationships' in *Journal of Agricultural Economics* 57:2, 185-197.

*Taken from a special issue of the Journal of Agricultural Economics assessing the interdisciplinary, inter-Research Council Rural Economy and Land Use (RELU) research programme. See also Harvey, Philipson & Lowe, Tiffin, Traill & Mortimer and Waterton, Norton & Morris.*

*Mariella Marzano, David Carss and Sandra Bell write of their 6-month study of the experiences and perceptions of researchers working on the RELU projects, arguing that effort, time and resources are needed in allowing for the development of relationships and means of communication between disciplines, and so effective collaborative research.*

*The researchers acknowledge the challenges and difficulties involved in understanding different disciplinary perspectives, acknowledging the strengths and weaknesses of different disciplines, and learning to work together effectively. The paper makes a valuable contribution in having conducted empirical work and so producing more substantive findings to ascertain what others have written of as a more theoretical issue. Concrete advice emerged from talking with researchers, such as the value of actively 'teaching' other researchers about one's discipline and methods rather than just 'presenting' and showing how things are done. It is argued that such teaching also serves in the establishment and building of relationships that are at the core of conducting interdisciplinary research.*

Nightingale, A. (2003) 'Nature-Society and Development': Social, cultural and ecological change in Nepal' in *Geoforum* 34, 525-540.

*In this paper Andrea Nightingale argues for the need to consider 'social relations, cultural practices and ecological conditions' together in an interdisciplinary approach in order to understand 'the complexity and non-static nature of environmental and social change in the context of uneven development'; how environmental policies can be socially untenable, and how this can undermine efforts on all sides, etc. She references 'feminist geography' and 'political ecology' as two areas drawn upon, and argues for the need for more dynamic understandings of ecology in political ecology. A very interesting piece that does not link too much theoretical work around interdisciplinary research, but instead pursues the author's concerns with the potential for productive interchange between her several overlapping disciplines of concern.*

Petts, J., Owens, S., Bulkeley, H. (2008) 'Crossing Boundaries: Interdisciplinarity in the context of urban environments' in *Geoforum* 39, 593-601.

*A paper exploring the rationales for crossing disciplinary boundaries, and associated problems with doing so. Although the authors' (Judith Petts, Susan Owens and Harriet Bulkeley) locus is geography, this paper presents an interesting general discussion around types of cross-disciplinarity and 'border troubles' when seeking to cross or work between disciplines.*

*The paper opens with some reflection upon the Research Councils' push for an interdisciplinary approach to Sustainable Cities, and how this resulted in their funding separate research initiatives rather than anything joint. The authors relate the paper to an ESRC transdisciplinary seminar series they ran in 2003-4, 'Knowledge and Power: Exploring the Science/Society Interface in the Urban Environments Context'. They argue that 'with interdisciplinarity, hope tends to triumph over experience' (p.595); disciplines become deeply structured and structuring, shaping concepts, language, communities and careers.*

*The authors outline understandings of multi-, inter- and transdisciplinarity from workshops they conducted with researchers working within these interdisciplinary initiatives. Multidisciplinarity was seen as being more real-world problem-focussed, with researchers working within their own disciplinary understanding; interdisciplinary research involved occupying the spaces between disciplines with the objective of synthesising disciplinary perspectives, and transdisciplinarity renegotiated the disciplinary map. The authors emphasise that there exists a continuum of approaches, with no neat boxes into which things can be placed, but rather a loose range of typologies within which endeavours can be loosely gathered.*

*Finally, they present a clear outline of five 'border troubles', and make several astute recommendations in the concluding section, including the need to focus more on the intellectual challenges of interdisciplinary research, and the need to assess the potential costs of different forms of foci of interdisciplinary research, as well as singing the benefits.*

Phillipson, J. and Lowe, P. (2006) 'Reflexive Interdisciplinary Research: The Making of a Research Programme on the Rural Economy and Land Use' in *Journal of*

*Agricultural Economics* 57:2, 165-184.

*Taken from a special issue of the Journal of Agricultural Economics assessing the interdisciplinary, inter-Research Council Rural Economy and Land Use (RELU) research programme. See also Harvey, Marzano et al., Tiffin, Traill & Mortimer and Waterton, Norton & Morris.*

*A paper outlining the establishment of the UK Research Councils' Rural Economy and Land Use (RELU) programme, so looking more at natural-social science interdisciplinary research. A good outline of the state-of-play of interdisciplinary research discussions, re: Abbott, Klein and Strathern, et al. The paper presents RELU as a reaction to demands for interdisciplinary research within policy discourse concerning sustainable development and the knowledge economy, and pressures for greater accountability in science. Jeremy Phillipson and Philip Lowe make significant reference to the problems encountered in reviewing and assessing interdisciplinary research proposals. They conclude that whilst the commitment to stakeholder engagement had a significant element of rhetoric to it, the focus upon promoting and pursuing interdisciplinary research was more full-blooded.*

Simms, A. (2002) *Balancing the Other Budget*. London: New Economics Foundation.

*This paper compares the issues of financial and ecological debt and 'who owes who in the balance of global debt' (p.1), arguing that the 'real' total debt situation is remarkably different to the commonly-painted financial North-South picture once we begin to calculate the costs of resource-depletion and the environmental effects of 'economic growth'. Andrew Simms writes, for financial and ecological debt respectively, of the scale of the problems, their impact upon people and economies, the legitimacy of the debts incurred, possible means of resolving their respective crises, and finally proposals as to how to engage in doing so. A short but very powerfully argued piece of 'economic' thinking beyond the mainstream of economics, bringing in understandings from surrounding fields that pertain strongly to real-world concerns, in the manner of Bruce, et al.'s (2004) mode 2 interdisciplinarity. See also Elliott et al. (2008), Jackson (2004) and Marks, et al. (2006); see Elliott (2008) for an outline of the New Economics Foundation.*

Tiffin, R., Traill, W.B. and Mortimer, S. (2006) 'Food Choice in an Interdisciplinary Context' in *Journal of Agricultural Economics* 57:2, 213-220.

*Taken from a special issue of the Journal of Agricultural Economics assessing the interdisciplinary, inter-Research Council Rural Economy and Land Use (RELU) research programme. See also Harvey, Marzano et al., Phillipson & Lowe, and Waterton Norton & Morris.*

*Richard Tiffin, W. Bruce Traill and Simon Mortimer here present a review of how economists are beginning to borrow insights from other disciplines in their models of consumer choice, and particularly food-choice. The suggested discipline that can and should be drawn upon here is psychology. The authors state that interdisciplinary research in this area is in its infancy, but manage to point to a few articles with such a focus.*

Waterton, C., Norton, L. and Morris, J. (2006) 'Understanding Loweswater: Interdisciplinary Research in Practice' in *Journal of Agricultural Economics* 57:2, 277-293.

*Taken from a special issue of the Journal of Agricultural Economics assessing the interdisciplinary, inter-Research Council Rural Economy and Land Use (RELU) research programme. See also Harvey, Marzano, et al., Phillipson & Lowe and Tiffin, Traill & Mortimer.*

*The paper reports on a scoping study funded under the Rural Economy and Land Use (RELU) programme. Clare Waterton, Lisa Norton and Jake Morris begin by pointing to a growing literature upon public engagement with the environment and the difference that the particular knowledges that different publics can bring to research and policy endeavours. As with many of the RELU pieces reviewed here, there is an emphasis upon the crossing of natural and social science disciplinary boundaries more than intra-social science interdisciplinarity, but the insightful and reflexive manner in which this work is reported make it very interesting for our concerns here. Furthermore, within the project a number of social scientists from different disciplines were working together and so the interdisciplinarity does relate somewhat directly to the concerns of this bibliography.*

*The writers refer interestingly to ‘compiling a ‘patchwork quilt’ of different forms of expertise’ (p.283) in order to understand the potential contributions to be made by different accounts, and the challenges of withholding judgment in this way, a perspective which relates directly to reflections upon the appropriate attitudes required by interdisciplinary researchers elsewhere here.*

## Development

Adger, W.N. (2000) 'Social and Ecological Resilience: are they related?' in *Progress in Human Geography* 24, 347-364.

*A discussion-piece around the possible transfer and application of tools from ecology to human geography, in thinking around sustainable development. W. Neill Adger presents a consideration of whether the concept of 'resilience' (ecological-environmental) could usefully be applied to groups or communities in considering 'social resilience', and of possible links between the two. The paper's applied focus is around Mangrove conversion in Vietnam. The paper does not contain much reflection upon the interdisciplinarity of the work as such, but rather stands as a solid example of interdisciplinarity-in-practice.*

Fine, B. (2002) 'Economics Imperialism and the New Development Economics as Kuhnian Paradigm Shift?' in *World Development* 30:12, 2057-2070.

*A reflection-piece upon the dangers of certain forms of interdisciplinary research. Ben Fine argues that economics imperialism is raging across the social sciences – its designs upon development studies (re: the post-Washington Consensus) bears parallels to a Kuhnian paradigm shift. Fine writes of the discursive dominance of economics, and the unsettling marginality of writings upon economics' recognised weaknesses. The new colonialism is premised around a focus upon market imperfections, particularly informational asymmetries, and the attitude that a newly world-aware economics can apply its tools to a much broader range of affairs – and disciplines. Fine contends that whilst researchers from other social sciences might hope for a 'civilising influence' to be borne out through the export of their ideas to economics, the more likely outcome is an extension of this colonialism and an absorption and adaptation of externally-sourced ideas to fit with slight variations upon the economics mainstream.*

Giddings, B., Hopwood, B. and O'Brien, G. (2002) 'Environment, Economy and Society: fitting them together into sustainable development' in *Sustainable Development* 10, 187-196.

*A paper arguing that sustainable development is necessarily an interdisciplinary, if not a transdisciplinary, field of concern. Bob Giddings, Bill Hopwood and Geoff O'Brien contend principally that treating the three areas separately leads to too narrow techno-scientific approaches that fail to deal with the complexities of the whole. A good reflective piece beginning from the position that sustainable development is a very open and amorphous concept that can be fitted to most worldviews, and so in and of itself means little. The paper usefully seeks to complexify simplistic understandings of interlocking 'circle-systems', re: Economy-Society-Environment. There is not much mention of, or reflection around, interdisciplinary research in connection with the discussion, although it is clearly a paper devoted to developing interdisciplinarity with regard to the mentioned subject areas.*

Harriss, J. (2002) 'The Case for Cross-Disciplinary Approaches in International Development' in *World Development* 30:3, 487-496.

*A paper published as a special discussion-piece addendum to an issue of World Development (30:3) produced from a debate around the disciplinary focus of the Global Development Network, an outgrowth of the World Bank. See also Jackson, Kanbur and White.*

*John Harriss argues that disciplines produce the conditions for the production of knowledge, but that they are also constraining and so can limit this production. So good scholarship requires both discipline and anti-discipline, and disciplines are saved from themselves by cross-disciplinary work. The piece usefully puts into question the 'hard/soft', 'quantitative/qualitative' binaries into which economics and other social sciences (anthropology, politics and sociology in particular) are often placed, arguing for the 'qualitative hardness' of good anthropological research, with its constant self-reflexivity, and the 'quantitative softness' of economic analyses based on simplistic and/or ungrounded assumptions. Harriss concludes that the disciplines in one sense need each other to produce more coherent, effective analyses.*

Jackson, C. (2006) 'Feminism Spoken Here: Epistemologies for interdisciplinary development research' in *Development and Change* 37:3, 525-547.

*A paper arguing that a focus on social justice within Development Studies can facilitate interdisciplinary research; that a driver for interdisciplinary research is a shared politics of progressive social change, and that feminist epistemology can offer solutions to old disciplinary-interaction problems. Cecile Jackson explores these ideas through a consideration of feminist standpoint theory and other aspects of feminist epistemologies, with regard to economics and anthropology. The piece usefully links itself with the work of Marilyn Strathern at several points in consolidating its argument.*

Jackson, C. (2002) 'Disciplining Gender?' in *World Development* 30:3, 497-509.

*Paper published as a special discussion-piece addendum to an issue of World Development (30:3) produced from a debate around the disciplinary focus of the Global Development Network, an outgrowth of the World Bank. See also Harriss, Kanbur and White.*

*In this paper Cecile Jackson argues that economics occupies a far too dominant position re disciplines speaking of development, with regard to (multilateral) development agencies. The paper recognises institutional disincentives to interdisciplinary research for researchers, but argues that inequality is multidimensional, so necessitates different disciplinary voices. Argues that contradictions in approach between disciplines can be a source of productive tension: refers to 'feminist economics' and development research, and the valuable potential contributions of SAP (Sociology, Anthropology & Politics) in reworking and developing development research beyond its economic focus. Jackson contends that interdisciplinary research can suffer from a lowest common denominator effect, whereas multidisciplinary research does not.*

Kanbur, R. (2002) 'Economics, Social Science and Development' in *World Development* 30:3, 477-486.

*Paper published as a special discussion-piece addendum to an issue of World Development (30:3) produced from a debate around the disciplinary focus of*

*the Global Development Network, an outgrowth of the World Bank. See also Harriss, Kanbur and White.*

*Ravi Kanbur argues that development economics is nowadays 'mainstream economics applied to poor countries', and contends that the discipline of development would benefit from treating other contributors (Sociology, Anthropology and Politics – SAP – are mentioned) as more equal voices in addressing problems (so the argument remains that both multi- and interdisciplinary research are and should be more problem-focussed).*

*Kanbur's piece usefully raises questions around certain assertions made by the authors, whilst agreeing with much of their contributions; as such, the Kanbur article helps in developing the rigour of the discussion-piece addendum as a whole.*

*Kanbur outlines the standard understanding of 'cross-disciplinary' research whereby interdisciplinary research is aimed at a more full integration of disciplines, whilst multidisciplinary research is each discipline doing their work in their way, and communicating with each other. Because of this interpretation, he is somewhat dismissive of interdisciplinary research, being wary of the absorption of SAP into the economic mainstream. Kanbur proposes the standard line that cross-disciplinary research is best pursued through problem-specific work.*

McNeill, D. (1999) 'On Interdisciplinary Research: with particular reference to the field of environment and development' in *Higher Education Quarterly* 53:4, 312-332.

*This paper does not fit our agreed inclusion criteria, given that it is dated 1999, and was written by an academic based in Oslo; however the subject of the work, and the fact that its focus included the UK amongst other countries, meant that it was included. In the paper Desmond McNeill outlines a good summary of existing literature reviews of interdisciplinary research. McNeill is another who makes reference to the RAE's discouraging interdisciplinarity early in the article, as well as to the problems in judging the quality of interdisciplinary work. He then moves on to definitions, deploying inter- as the catch all for cross-disciplinary work.*

*McNeill uses the concepts of 'ambition', 'scope' (referring to distance between disciplines, both in terms of subject-matter and methodology), arguing that the greater the scope, the lower must be the ambition. He proceeds to consider several areas of interdisciplinary endeavour of concern to environmental and development research, providing some useful focus around economic sociology and sociological economics. McNeill usefully gives some time to another 'great divide', as he puts it, which is that between research and application, and questions of how interdisciplinary research and researchers might position themselves around or across the divide that he proposes exists.*

Pardo-Guerra, J.P. (2004) [Mexico] 'When Social Physics Becomes a Problem: economics, ethics and the new order' in *Real World Economics Review (formerly Post-Autistic Economics Review)* 29.

*The paper begins by outlining and bemoaning the merging of economics and mathematics, which the author argues left the mainstream of economics unable to cope with systemic complexity, and dissociated it from ethical*

*discussions at a discursive level. Juan Pablo Pardo-Guerra recommends adopting strategies used in other disciplines (namely physics): strengthening the debate around the limits of economics, and building an awareness of cultural difference / relativism into the standard (and assumed universal) economic model. These two paths are chosen because they would have a good hope of drawing non-economists into the debate, and it is this 'interdisciplinary' approach that the author recommends as a strategic next step in improving economic discourse, or saving economics from itself.*

Perry, A. (2002) 'The Relationship Between Legal Systems and Economic Development: integrating economic and cultural approaches' in *Journal of Law and Society* 29:2, 282-307.

*This paper argues for the need to adopt an interdisciplinary approach towards understanding the relationship between legal reform and economic development, bridging the gap between economic and culture-based approaches, with regard to cultural variances in private sector perceptions and expectations of legal systems. Amanda Perry draws on Geert Hofstede's analysis of variance in cultural values to argue for this, and to argue for the practicality of studies to produce 'empirical measures' as well as typologies of cultural variance. Whilst firstly advocating a more multi-disciplinary aggregation of existing data from different disciplines, the conclusion of the paper then argues for the need for a new multi-country study to understand private sector perceptions more particularly, and to move away from the simplistic one-rule-fits-all approach of 'Washington Consensus' legal discursive practices.*

White, H. (2002) 'Combining Quantitative and Qualitative Approaches in Poverty Analysis' in *World Development* 30(3), 511-522.

*A paper published as a special discussion-piece addendum to an issue of World Development (30:3) produced from a debate around the disciplinary focus of the Global Development Network, an outgrowth of the World Bank. See also Harriss, Jackson and Kanbur.*

*In one way, this paper is more of a discussion around methodologies than disciplines, but through working with the quantitative-qualitative division as is commonly applied to the disciplines becomes more of a piece around multi- and interdisciplinary research. Howard White argues that the false dichotomy of quantitative/qualitative re: economics and other social sciences needs breaking down; both methods have their uses (and misuses) and relevance, and both 'areas' can make use of quantitative analyses; the issue is more of applying appropriate methods to appropriate data-sets. He argues that research will benefit from an appropriate combination of techniques. This argument is explored through two study-examples.*

## Disability

Bricher, G. (2000) 'Disabled People, Health Professionals and the Social Model of Disability: Can there be a research relationship?' in *Disability and Society* 15:5, 781-793.

*This paper is not interdisciplinary research as such, so much as a proposal for the need for such; a piece which argues for the productive possibilities of working the 'social model' into health professionals' research, rather than simply discounting all health professional research from a social model, disability studies perspective. Gillian Bricher argues that a dialogue between health professionals and disabled people (presumably self-advocates and researchers, although the author does not state this) needs to be developed. Issues that would need to be addressed include the challenges of creating 'credible, participatory, respectful and non-oppressive' research questions and methods.*

Davis, J.M. (2000) 'Disability Studies as Ethnographic Research and Text: research strategies and role for promoting social change?' in *Disability and Society* 15:2, 191-206.

*Another research strategy proposal-piece, John Davis draws upon disability studies and anthropology literature to explore the productivity of the former adopting certain approaches and attitudes from the latter. He critically examines the concept of emancipatory research through comparisons with ethnographic writings around reflexivity and cultural exchange; and considers different research strategies which may help disabled people in their struggles with oppression. Ethnographic and emancipatory research, it is argued, both require the researcher to be a reflexive participant; the researcher's and the respondents' views are both exposed to continual review. From an ethnographic perspective, the author contends, the disability researcher should not seek to fit experiences to the medical, social or other model. This would restrict the researcher's freedom and ability to interpret worlds, experiences, etc, as well as excluding or reinterpreting the views and opinions of respondents who may not work within a social model framework. The paper makes some very interesting suggestions with regard to how disability studies could (and has, in their own research) benefit from this interdisciplinary engagement.*

Forshaw, M. (2007) 'In Defence of Psychology: a reply to Goodley and Lawthom (2005)' in *Disability and Society* 22:6, 655-658.

*This piece is a direct response to the Goodley and Lawthom (2005) article listed below. Reading the two together demonstrates something of the dead-ends that can occur when conversations between researchers from different disciplines take place with no agreed points of common ground or reference. Mark Forshaw states that he approves of the described empowering aims of participatory action research, but that he takes issue with what he sees as the peremptory dismissal of mainstream psychology. In doing so, his piece also serves as an attempted defence of quantitative research methods against what he sees as 'the preciousness of qualitative methodologists'. He points to the*

*development of various wings of more qualitative psychology and changes in training processes at most institutions that now include qualitative training, labelling their attacks upon 'a professional discipline' as 'ungrounded'. Forshaw presumes that 'community psychology' is Goodley & Lawthom's own creation and criticises this as a divisive and 'camp'-based approach.*

Goodley, D. and Lawthom, R. (2005) 'Epistemological Journeys in Participatory Action Research: alliances between community psychology and disability studies' in *Disability and Society* 20:2, 135-151.

*The paper argues that if interdisciplinary research is intended to facilitate the achievement of common goals, then a cross-fertilisation between disability studies and community psychology could be a very productive interdisciplinary exchange (with particular emphasis upon the development of participatory action research approaches). Dan Goodley and Rebecca Lawthom explain disability studies' standard suspicions of 'mainstream psychology', characterised as being a 'pathologising, voyeuristic, individualising, impairment-obsessed discipline' which contributes to the social exclusion of people with impairments. The authors outline commonalities in the approaches of disability studies and community psychology, before explaining the 'collectivizing' aspects of the latter which they argue could work well in disability studies, adding weight to a self-emancipatory approach within projects and creating spaces for re/conceiving one's own and one's community's identity. This, it is argued, could further contribute to overcoming the barriers and lines of separation between the disabled and non-disabled as actor-positions within disability studies.*

Imrie, R. (2000) 'Disabling Environments and the Geography of Access: Policies and Practices' in *Disability and Society* 15:1, 5-24.

*This paper argues that 'geographical frameworks and/or perspectives' need to be included within studies around disabled people and public policy. Rob Imrie begins by commenting that it is interesting that writings about the lives of disabled people are usually 'aspatial', or without any geographical point of reference, and goes on to talk around issues such as access to public transport, variations in local authority service provision and geographies of institutionalization (such as the location of day-centres, bus services and special schools) as indicating the centrality of geographical considerations to disability studies. Imrie provides a literature review of the use of geographical considerations in public policy analyses and argues for the central relevance of this to exploring the lives of disabled people, then outlines research undertaken on this basis. The piece overall presents an interesting and illuminating challenge to extend disability studies' interdisciplinarity by taking account of geographical methodologies and rationales for exploration.*

Sherry, M. (2004) 'Overlaps and Contradictions Between Queer Theory and Disability Studies' in *Disability and Society* 19:7, 769-783.

*Mark Sherry argues that the lack of interaction and exchange between the two mentioned disciplines constitutes a 'serious shortcoming'. He then moves on to describe similarities in the experiences of individuals within the two groups, cross-over in reactions to these experiences, and similarities in the theoretical bases of Queer Theory and Disability Studies, including their debt to*

*feminism. Sherry then engages a more limited discussion towards the end of the article around differences between the two disciplines. The paper makes an interesting contribution to debates around how disability studies could productively work more with neighbouring discourses that share common roots and political standpoints.*

Waltz, M. 'Reading Case Studies of People with Autistic Spectrum Disorders: a cultural studies approach to issues of disability representation' in *Disability & Society* 20:4, 421-435.

*In this paper Mitzi Waltz uses analytical techniques from cultural studies in looking at influential case studies in the construction of autism as a category. She argues that reading medical case studies as texts has become a recognized part of cultural studies research, and that here she is simply extending the practice to research around autism. The article explores the construction and development of power relations through the narrative discourse; in this case, of the autistic person as passive or powerless and the medical interventionist as knowing and acting from a position of power, interpreting the actions of the autistic person through conceptual and symbolic systems (e.g. Freudianism) that they have had no contact with. Waltz argues that this cultural studies approach is useful for critically analysing texts which tend to re-present a more medical model approach to Autistic Spectrum Disorders, allowing for an analysis of the place of ideology, voice and power within the discourse. The paper makes another valuable contribution to possible developments in disability studies through the adoption of surrounding disciplinary tools and methods.*

## GLOSSARY

### **Discipline**

*In academic terms, a discipline is normally regarded as a relatively self-contained body of knowledge and research with its own gathering of experts, a common language and a recognised set of methodologies.*

*The ESRC currently recognises 18 disciplines, listed below (sourced from <http://192.171.198.243/JesHandBook/jesHelp.aspx?m=s&s=141>):*

Area and Development Studies  
Demography  
Economic and Social History  
Economics  
Education  
Environmental Planning  
Human Geography  
Linguistics  
Management and Business Studies  
Political Science and International Studies  
Psychology  
Social Anthropology  
Social Policy  
Social Work  
Socio-Legal Studies  
Sociology  
Science and Technology Studies  
Statistics, Methods and Computing

**Adisciplinary** *Quite an infrequently used term, deployed to intimate something akin to, if not somehow beyond, transdisciplinarity.*

**Counterdisciplinary** *Another infrequently used term to refer to interdisciplinary work which endeavours to destabilise and throw into question elements of its parent disciplines, as opposed to such interdisciplinary work as can consolidate the bases of the disciplines.*

**Crossdisciplinary** *This term is most commonly used as a catch-all or generic referent for work employing more than one discipline, thus covering all of the terms listed immediately below.*

**Interdisciplinary** *This term is used in referring to research that brings together researchers from different disciplines, to develop and pursue research that will involve actively crossing disciplinary boundaries and negotiating common areas of understanding, or understandings of differences; negotiating a common language, methodologies and standards of proof. Opinions differ on the extent to which such agreements need to be achieved in order to pursue successful interdisciplinary research, and to what extent an ongoing agonistic relationship between the co-working disciplines can be productive (cf. Barry et al. 2008).*

**Radical & Cognate Interdisciplinarity** *A distinction proposed by Robert Evans and Simon Marvin (2004, 2006) to distinguish between interdisciplinary research that cut across Research Council boundaries ('radical') and that which brought together researchers from within the same Research Council area and so combined disciplines that were more 'cognate'.*

**Mode 1 and Mode 2 Interdisciplinarity** *A distinction made by Bruce, et al. (2004); Mode 1 interdisciplinary research is directed towards overcoming blockages, of enabling advancements, within disciplines or the development of new disciplines; Mode 2 interdisciplinary research is more problem-oriented and addresses issues of social, technical or policy relevance. In this way, in the longer-term, Mode 1 could be viewed as helping to develop and thereby maintain disciplinary structures, whilst Mode 2 could be seen as producing more in the way of problem-specific disciplinary integrations and so undermining disciplinary structures.*

**Monodisciplinary** *This is used to refer to all work making use of only one discipline, that is, traditional disciplinary endeavours.*

**Multidisciplinary** *This term refers to research that involves people from different disciplines coming together to conduct research around a problem or issue of common interest to all parties, but whereby the researchers all work within their own disciplinary frame-of-reference and effectively conduct their own piece of research, cooperating but not changing. There is no attempt at a development of common understandings or the synthesis of findings, rather it is in confronting the differences between the two that insight is sought by the end-user.*

**Pluridisciplinary** *Another term used by a few writers in preference to multidisciplinary, but to the same effect.*

**Pre- and Postdisciplinary** *'Postdisciplinary', when used, is frequently posed alongside predisciplinary (see Sayer 2001, Jessop & Sum 2001), in arguing that the disciplines represented a phase in the development of research and thinking, that we should now move beyond, since disciplines constrain thinking. Insofar as it refers to 'going beyond' disciplines, it is somewhat interchangeable with Transdisciplinarity (see below). Predisciplinary is generally used in referring to those who have elsewhere been referred to as 'grand theorists'<sup>1</sup>, writers such as Leibniz and Marx who worked in times before the institutionalisation of the disciplines within the university system. Postdisciplinary, it is inferred, is something of a 'return to grand theory', a position in which writers such as Foucault are framed by Andrew Sayer (2001) and a few others.*

**Supradisciplinary** *Another term used by a few writers in preference to Transdisciplinarity, but to the same effect.*

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<sup>1</sup> Skinner, Q. (1990) *The Return of Grand Theory in the Human Sciences*. Cambridge: Cambridge University Press.

**Transdisciplinary** *The more common referent for work beyond consideration of disciplinary boundaries. Transdisciplinarity is variously referred to as being based on but going beyond or transcending disciplinary practices (Ramadier 2004), or being research more concerned to transcend academic enclaves to engage with real-world problems and thereby involvement different concerned publics in the research process (Lawrence & Després 2004). Transdisciplinarity is the term used by Nowotny et al. (2001, see Nowotny 2003 in this bibliography for a similar argument) in defining Mode 2 knowledge production.*

**Mode 1 and Mode 2 Knowledge Production** *A distinction first proposed by Michael Gibbons, Camille Limoges and Helga Nowotny in their book *The New Production of Knowledge: the dynamics of science and research in contemporary societies* (1994).*

*Mode 1 knowledge production represents the social and cognitive disciplinary norms which control the diffusion of knowledge into greater and greater numbers of disciplines, structuring who practices knowledge production as well as who practices what (disciplinary practices, conversations within a community of scientists).*

*Mode 2 knowledge production, by contrast, is carried out within its context of application; it is transdisciplinary, heterogeneous, transient, socially accountable and reflexive.*

*The contrast in such an abbreviated outline is striking, however the subtleties and complexities of this distinction are fully explored in the Gibbons et al. reference given above.*

**Research Councils UK (RCUK)** *A collective term for the assemblages of seven UK research council, government funded bodies that are responsible for the allocation of funding for university research.*

*AHRC (AHRB) Arts and Humanities Research Council (formerly Board)*

*BBSRC Biotechnology and Biological Sciences Research Council*

*EPSRC Engineering and Physical Sciences Research Council*

*ESRC Economic and Social Research Council*

*MRC Medical Research Council*

*NERC Natural Environment Research Council*

*STFC Science and Technology Facilities Council*

**Social Model and Medical Model** *These two terms refer to different ways of understanding disability. In the medical model, disability is understood as a physical (or intellectual) problem of the individual, which requires the individual to develop coping strategies. The 'social model' is a position/perspective developed by disabled researchers and self-advocates, that it is society which disables, not the person who is disabled per se. The individual is understood to have an impairment, but the 'being disabled' comes from social barriers to inclusion.*

*The simplest example to explain is that of the wheelchair-user who finds it impossible to enter a building with steps leading to the entrance. Here, the wheelchair-user is not disabled through their use of a chair, rather it is the steps into the building which disable them from entering. The model can be*

*extended through many areas around disability, from government support and service provision to social attitudes.*

**Washington Consensus** *A term associated with neoliberal governmental-economic policies; privatisation, reductions in state-imposed (import, export, etc.) duties, reductions in state expenditure on welfare, and so forth. Such policies as were pursued by Northern governments through the 1980s were then deployed through the International Financial Institutions (the International Monetary Fund, the World Bank and the World Trade Organisation) as a standard non-optional reform package prescription for socio-economic development.*

*The term was originally used by the academic Professor John Williamson in a more limited sense, but then took on a life of its own through both more market-fundamentalist actor-networks such as the IFIs and through its usage by IFI critics, leading to the development of the term 'the post-Washington consensus' by Professor Joe Stiglitz in his seeking to encourage the World Bank to move somewhat beyond its economic reductionism.*