ESRC National Centre for Research Methods

A Consultation to Identify the Research Needs in Research Methods in the UK Social Sciences

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Executive Summary

An extensive consultation is reported with members of the UK research methods community, broadly conceived, into the perceived needs for research into research methods for social sciences. Research needs identified are the following, grouped by topic; the first four were particularly prominent in the consultation:

1. Policy evaluation.

- Research into trials in a social context, integration of quantitative and qualitative analysis, unconventional methods including realistic evaluation, action research, and observational studies.
- The development of community involvement techniques that both inform and elicit views, and techniques for exploration of attitudes, including commercial methods, and methods for hard to reach groups.

These methods are seen as important given the recent emphasis on evidence-based policy and a perception that unconventional methods are under-utilised.

2. Comparative research.

- Methods for question translation and mode effects, and the implications of differing sampling methods and response rates.
- Techniques for radical cross-cultural comparisons.
- Research into analysis of area or country effects, such as logic-based methods.

Comparative work is a requirement of the policy community and is seen as increasingly important as a consequence of globalisation.

3. Mixed methods.

- How to achieve integration not juxtaposition of methods, especially across quantitative and qualitative analysis, in single studies.
- Research on integration of quantitative and qualitative datasets.

Mixed methods are seen as key to policy evaluation and for deeper understanding of research outcomes more generally.

4. Data linkage.

- Exploring the potential of linking to administrative data, better analysis of statistical properties of linked data and exploration of specific omissions from linked data.
- Research into the quality of administrative data, and comparative work to assess potential for linking to specific datasets from surveys.

Linkage has huge but unexplored potential to expand datasets.

5. Qualitative data collection and analysis.

- Concerning collection, context effects in and replicability of interviews, effects and opportunities of new modes of data collection afforded by technology; development of methods to handle data from online sources (‘blogs,’ chatrooms, email and so on); research to explore the potential for rigorous visual methods.
- Concerning analysis, development of tools for text mining, and computing resources to ‘scale-up’ qualitative research; exploration of the replicability of interview analysis and geographical generalisability of qualitative research.

Topics concerning collection are seen as important because of the pace of technological change and concerning analysis because, *inter alia*, of the contribution of qualitative research to policy work.

6. Survey methods.

- Research to identify and explain mode effects in data collection, including new modes such as online panels and PDAs, and to produce a typology of question portability across modes. Also to address portability through research on question design. These are seen as important because of perceived difficulties of traditional methods and availability (or temptations) of new technologies.
- Research to explain, counteract and account for falling response rates; exploration of the relationship between non-response rates and bias.

7. Longitudinal methods and spatial analysis.

- Development of longitudinal methods for social science data, including event history analysis and multilevel modelling, its extension to further data types including multiple time series and spatio-temporal data.
- Exploration of event sequencing, social change and of spatio-temporal simulation.
- Improved methods for handling spatial auto-correlation, scale issues and estimating distributions of small area statistics.
- Longitudinal simulation as a key input to policy analysis.

8. Research synthesis.

- Methods to control for social context and to explore relationships between reviewer's choice of methods and outcomes of narrative reviews.
- Development of synthesis methods for qualitative research.

9. Software and technological developments.

- Improvements in text mining techniques and tools needed for the analysis of visual data, plus more reliable software for annotating streaming digital footage.
- Software that enables easier switching between data handling and analysis.
- Improved data visualisation tools.
- Developments in computing to match increasing data availability.
- Research to explore the validity of algorithms to 'quantitise' qualitative data.

10. Agent-based social simulation (ABSS).

- Research to explore abstract model- versus evidence-initiated approaches, whether numerical or linguistic representations of qualitative phenomena are appropriate, and whether achievements and outputs of ABSS offer lessons for social science generally.

Practitioners see ABSS as an innovative approach to social science with integrative and interdisciplinary potential, in conflict with conventional methods.

11. Interdisciplinary research.

- New models needed of collaborative working across between disciplines.
- Research to determine and demonstrate improvements over mono-disciplinarity.

These developments are seen as necessary both within social sciences and in conjunction with natural sciences, and are seen as important partly because many policy issues are so multi-faceted.

12. Research practice, innovation, teaching and learning.

- Research to identify best practice by synthesis and evaluation of frontier research in numerous technical topics.
- Research on the process of methodological innovation itself.
- Research to identify the most effective forms of teaching of research methods in areas in which the UK has a skills gap.

Research in some of these areas is thought to offer high impact compared to concentration on frontier research alone.

13. Substantive issues.

Specific substantive areas identified included:

- genomics and the social impacts of new technologies;
- environmental change; globalisation;
- new forms of social interaction;
- family research;
- researching emotional and sensory life.

Research by multidisciplinary teams on these topics is a likely means of methodological advance.

The report encompasses a wide variety of views and has favoured inclusivity over forcing a particular structure on responses. It should therefore be seen primarily as a resource, to inform future funding calls or scoping studies. The report reinforces and extends the findings of earlier consultation exercises for the ESRC on methods.

Acknowledgements

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Contents

1. Introduction

The ESRC National Centre for Research Methods (NCRM) was established in April 2004 to enhance the range and quality of research methods used by the social science community. One of the objectives of NCRM is to assess current national provision and national needs in research methods and training through consultation with key stakeholders.

The ESRC asked NCRM to undertake a consultation exercise to identify the needs for research in research methods in the social science community. It was not intended that this would be a comprehensive analysis of the actual methodological research needs of the social science community but rather a consultation with a limited number of key stakeholders to identify their views on the methodological challenges for social research which further research could usefully address. The aim was thus to provide an overview of *perceived* needs for research rather than a substantive analysis. The format for the review (outlined in Section 2) was agreed with the ESRC in January 2006.

Background to the Consultation Exercise

The perceived shortfall in research methods skills, expertise and methodological development in the UK social sciences, particularly in relation to quantitative research methods, has been a concern of the ESRC for some time. This concern has resulted in the commissioning of a range of consultation exercises and considerable investments in research methods training, development and support for research (e.g., the Analysis of Large and Complex Datasets Programme (ALCD), the Research Methods Programme (RMP), National Centre for e-Social Science (NCeSS), NCRM and the Researcher Development Initiative (RDI)). The context for these developments has been identified as:

- A recognition that British Universities are not producing suitably skilled social scientists (especially in relation to quantitative methods) of sufficient quality and in sufficient numbers to meet the needs of academia and the public (especially Government) and private sectors.
- Significant developments in IT and computing power which offer opportunities to develop new methodological tools and techniques
- A growth in the number, size, complexity and types of datasets available, both qualitative and quantitative, which offers new opportunities for analysis and data linkage
- A recognition that the UK needs to retain its position of international excellence and to satisfy the needs of a knowledge-based economy and society

Previous Assessments

Addressing these needs and concerns has involved both *research* and *training/dissemination* and these have been a central part of the ESRC's investments on research methods. In developing initiatives, programmes and centres on research methods, various reviews and consultation exercises have been commissioned by the ESRC. The majority of these have focused on quantitative research. The documents arising from these reviews and consultation exercises have identified some specific areas in which methodological development is needed. Here we outline these in order that we can explore the extent to which these still arise as

concerns in our consultation. The specific areas identified here are drawn from: a review of social statistics (Skinner, 1999); consultation on the challenges for longitudinal research (Bynner, 2005); consultation with the social science community in the development of the RMP (ESRC Discussion Paper, September 2001); evaluation of the ALCD Programme (Blosfeld, 2002); Report on the ALCD programme (Smith, undated); ESRC consultation with stakeholders (ESRC, 2005).

The following needs and opportunities are identified in a range of reports or papers:

- Administrative data/ Data mining/Data linkage/Data quality

The research potential from the extension of access to administrative data sources is identified in a range of reports and papers but it is noted that there is a significant programme of research needed on data linkage and data quality. Issues of confidentiality and data protection are also raised by this and researchers have noted the need for methods to be developed to assess the risk of breaching confidentiality when releasing datasets in different formats. An assessment of the extent to which modes of analysis developed for commercial and marketing analysis of data are appropriate for a wider social scientific audience has also been noted.

- Evidence based policy and evaluation methods

It is widely noted that the trend towards evidence based policy indicates a need to develop and evaluate ways in which qualitative and quantitative research can be most appropriately used to evaluate social policy initiatives.

- Mathematical modelling and simulation

Simulation and modelling have been identified as one of the major developments in social science methodology over the last decade. However, it is noted in a number of documents that further work is needed in developing modelling methods for the analysis of data from multiple cohort studies and multiple generations as well as on developing simulations to predict future events or evaluate the impact of policies.

- Pathways analysis

It is noted that increasingly data are available to address the question of pathways to particular outcomes but strategies to analyse these data are not well developed. A need was identified to provide analysts with a clear structure for assessing which of a number of potential pathways are supported by the data.

- Research design, measurement and data collection

A need for further research in social statistics is identified in relation to the components of survey design and field work opportunities in a changing research context. Issues of attrition, missing data and measurement adequacy need methodological development and testing.

- Developments in computing power

The need to consider the opportunities presented by improved computer power for data collection, codification and the management of large and complex data resources, both qualitative and quantitative, is widely noted. These include written, graphic, audio and visual data. The need to evaluate the applicability of major developments in computing on statistical analysis is also noted.

- Longitudinal data analysis

Several issues relating to longitudinal data analysis have been identified. In particular, the charting of the strengths and limitations of longitudinal data for scientific inference and policy decisions and the use of longitudinal data to chart historical and individual change.

- Mixed methods research/methods for analysing integrated qualitative and quantitative data

The need to develop ways in which qualitative and quantitative approaches can be brought together and integrated in single studies as well as in relation to the secondary analysis of different data sets is noted in a number of reports and papers.

- Integrating multiple qualitative methods

Many research projects use multiple qualitative methods to collect data; there is a need to address the methodology of integrating data collected from various sources (e.g. focus groups, interviews, observations).

- Integrating 'bottom-up' and 'top-down' coding and interpretation in qualitative research

The ESRC discussion paper notes that recent developments in computer assisted technology are beginning to show that different approaches to coding in qualitative work based on language, narrative and text (i.e. 'bottom up' coding from the data and 'top down' coding applied to the data) can be potentially combined in the analysis of large-scale textual materials. They note the importance of more developmental work in this area.

- International/cross-national comparative research

Several documents note that the current and future important research challenges are in relation to global or international issues and require research to be carried out using an international or cross-national comparative perspective. It is noted that the techniques and methods of comparative research need further development.

- Interdisciplinary, cross-disciplinary and multi-disciplinary research

Reports and papers note the importance of cross-disciplinary and collaborative research across the social sciences and across the medical and social sciences. However, it is not clear the extent to which this is a methodological research need or about developing systems and opportunities to encourage disciplines to work together more closely.

- Substantive research areas

The Reports from the ALCD programme note the importance of methodological research being driven by problems in substantive areas and the need for social scientists to work closely with methodologists. Specific areas of substantive research identified in the ALCD documents include: econometric analysis of non-cooperative games and other experimental work in economics and sociology; interdependence of preferences, expectations and behaviour over time; linking biographical research and life course research; and, individual level diffusion analysis in areas where the propensity of an agent to behave in some way varies positively with the prevalence of this behaviour in a group.

Many of these topics have been, or are being, developed through projects within the RMP, NCeSS and NCRM. It is not our intention here to evaluate the extent to which needs for developments in research in these topics have been met. Rather, this consultation exercise

seeks to identify and explore topics key stakeholders see as research needs. In the concluding section we compare the needs identified in this consultation exercise with the topics identified above from previous assessments.

2. Consultation Procedure

Phase 1

Phase one comprised consultation with key stakeholders in social research using interviews and questionnaires. A common framework for identifying research needs was used. The aim was to provide an overview of *perceived* needs for research rather than a substantive analysis of actual needs.

Framework

The framework for identifying research needs targeted three channels through which methods-related research needs may arise:

- The first is through *substantive social science issues*, that is, new research questions and challenges within substantive areas.
- The second channel is through *data sources*. New types of data may become available to researchers giving rise to new methodological problems, or certain types of data might only be usable given advances in data handling or of an analytical nature.
- The third channel is developments within the field of *research methods* itself. This may consist of new techniques or innovations in existing methods, or the need to improve understanding of existing methods.

The framework also sought to identify why the needs are perceived as important and what benefits respondents believe research in this area would bring to UK social science research capacity.

In addition to this broad framework aimed at identifying methods-related research needs, the ESRC asked NCRM to explore needs specifically in relation to mixed methods and comparative research. These areas have been highlighted as areas of research needs through other sources and the ESRC asked us to explore these issues specifically in order to inform their consideration of initiatives in these areas.

Data Collection Methods

The three data sources were
i. interviews conducted by NCRM Hub researchers with key stakeholders.
ii. questionnaires sent out by NCRM Hub
iii. parallel consultation exercises conducted by NCRM Nodes

Each were designed around the common framework, and the data were collected between March and June 2006.

Procedures

Hub Consultation

For the interviews, key stakeholders were identified both in the research methods social science community and amongst users of research methods in academia, the public sector, private and voluntary sectors. The aim was to represent the views of individuals with both broad knowledge of or expertise in research methods, and a claim to represent bodies with an interest in methodological developments. Both quantitative and qualitative research interests were targeted. Interviewees were briefed about the framework well in advance. Semi-structured discussions of around 45 minutes were conducted face to face where possible and recorded, or else by telephone. Consultees were assured that comments would not be attributable to specific persons. Consultation was undertaken with 21 individuals (listed below).

Questionnaires were distributed by email to directors of the 70+ ESRC research centres and hosted on the NCRM website for open response. The NCRM website also provided details about the consultation exercise and invited interested parties to request the questionnaire if they wished to participate. The questionnaire is given in the appendix.

Node Consultation

The six NCRM Nodes were briefed to carry out independent consultations related to their particular areas of expertise within their specific networks. Three of the Nodes have expertise in quantitative methods, two in qualitative and one in research synthesis. Consultation reports were completed by five Nodes (BIAS, Lancaster/Warwick Node, MRS, QUALITI, Real Life Methods). The Nodes used a mix of face-to-face consultation as well as questionnaires (using the Hub-designed questionnaire) to email lists or individuals as follows:

- BIAS Node: questionnaire distributed to 15 key contacts (12 responses);
- Lancaster/Warwick Node: face-to-face consultation with colleagues, members of the Node and ESRC professorial fellows;
- MRS Node: questionnaire to 127 people with involvement with the work of the Node (11 responses), discussion within the Node team and from responses at Node events;
- QUALITI Node: face-to-face consultation within the Node, questionnaires distributed to Node associate members;
- Real Life Methods Node: questionnaire distributed to the qualitative longitudinal email list and a range of groups (Leeds Social Science Institute, Families, Life Course and Generations Research Group, University of Leeds, Morgan Centre, University of Manchester, Visual Sociology Association). Six individuals with a specific interest in research methods at the Universities of Manchester and Leeds were also invited to comment. The Node notes that response outside of the Node was limited and that their Report is primarily derived from their Node membership and associates, some members of the Morgan Centre and some members of the Qualitative Longitudinal email list.

Material Collected

Hub Consultation
The following stakeholders were interviewed by the Hub:[1]

Nick Buck, Economic and Social Data Service (ESDS), University of Essex
Roma Chapell, Office of National Statistics
Andrew Chesher, Centre for Microdata Methods and Practice, University College, London
Louise Corti – ESDS Qualidata, University of Essex
Angela Dale, Cathy Marsh Centre and Research Methods Programme, University of Manchester
Sue Duncan, Government Social Research
Peter Elias, Institute of Employment Research, University of Warwick
Maria Evandrou, University of Southampton
Peter Halfpenny, National Centre for e-Social Science, University of Manchester
John Holmwood, University of Birmingham
Roger Jowell, City University
Ray Lee, Researcher Development Initiative, Royal Holloway, University of London
Jane Lewis, Natcen
Scott Moss, Centre for Policy Modelling, Manchester Metropolitan University Business School
Gerry Nicholaas, Natcen
Rob Proctor, NCeSS, University of Manchester
Ceridwen Roberts, Social Research Association
Keven Schurer, ESDS, University of Essex
Mark Speed, IFF Research
Karl Wilding, National Council for Voluntary Organisations
Diana Wilkinson, Chief Social Researcher, Scottish Executive
Melanie Wright, ESDS, University of Essex

Seven completed questionnaires were returned, representing a response rate of just under 10%. Six of these were from representatives from ESRC Research Centres and one from an individual.

Node Consultation
In common with the experience of the Hub, questionnaire response from email lists and organisations targeted by the Nodes appeared poor. A better response was achieved by questionnaires sent to targeted lists of individuals. The majority of data provided by the Nodes relates to consultation within the Node and with their Associate Members. The specific response in relation to each Node consultation is provided in the Reports of each Node in the appendix of this document.

Collation of Data

Data comprised detailed notes from each face-to-face consultation conducted by the Hub, Hub questionnaire responses and Reports from the Nodes. These three sources of data were examined by the Hub team in order to identify key themes in which the issues identified in the data could most usefully be ordered. As far as possible, the aim was to ensure that all issues

[1] With the exception of Scott Moss with whom we had extensive correspondence.

identified were included in the initial report. A total of 13 broad topics were identified; four of these topics were prominent in participants' responses.

Phase 2

A Report of the findings from phase 1 was prepared and made available to a wide range of interested parties. The Report provided background material on the Consultation, the methods employed and a description of the 13 themes. Phase 2 entailed seeking responses to the initial Consultation in order to clarify and confirm the needs identified. The second phase of consultation took place between July and September 2006. A number of strategies were used to publicise the Report and to invite responses from a broad spectrum of the research methods community. These comprised:

- Posting of the Report on the NCRM website with an invitation to respond made via the NCRM/RMP email list as well as a general invitation on the front page of the NCRM and RMP websites;
- Emails to all the participants to the phase one consultation (both Hub and Nodes) inviting responses;
- Emails to a range of learned societies/professional organisations inviting responses. Those contacted were: Academy of learned societies for the social sciences; British Academy; British Society of Population Studies; British Sociological Association; British Educational Research Association; British Psychological Society; British Society of Criminology; JUC Social Work Education Committee; Market Research Society; Political Studies Association; Royal Economic Society; Royal Geographical Society; Royal Statistical Society; Social Policy Association; Social Services Research Group.
- Presentation at the Research Methods Festival as well as publicity material made available from the NCRM stand at the Festival;
- A consultation seminar for senior researchers organised in collaboration with the Social Research Association (SRA). This comprised a brief presentation of the findings from phase 1, responses from two discussants followed by general responses from participants.

Responses to the phase 1 Report were invited in relation to the following questions:

- What areas identified in this report are already well researched?
- What are the priorities within the topics outlined in the report?
- What is the specific research agenda in relation to these topics?
- In what substantive areas are these specific methodological issues relevant?
- Are there any important gaps in the report in relation to important methodological research needs?

Seventeen written responses were received. In addition, 30 senior researchers from a range of settings attended the SRA seminar which was aimed at gaining responses from the social research community. Participants included Government researchers, academic researchers and researchers from private and charitable research organisations.

This Report comprises integrated responses from Phase 1 and 2 consultations.

3. Findings: Topics identified

Thirteen topics were identified with each one comprising a number of issues. Four topics were prominent in participants' responses: evaluation methods, comparative research, mixed methods and data linkage. Of these, mixed methods and comparative research, were not entirely respondent-generated in that the ESRC asked us to explore the needs for research in these areas with respondents. Nevertheless, these two areas were frequently discussed without prompting and where prompting occurred they were generally identified as important topics. In this section we outline each topic and the issues relevant to it. We commence with the four topics identified most prominently; the others are not listed in any order of priority.

3.1 Policy Evaluation

Several interviewees raised the issue of methods for the evaluation of policies or other interventions. Academics, policy researchers and others stated that there was both a need and demand for fresh thinking here. However, there was frequently a perception that unconventional methods were currently difficult to justify to government or auditing bodies as rigorous. Consultees often felt there was a research need, therefore, to critically appraise and develop alternatives to conventional methods. The following paragraphs identify these alternatives and the methodological issues that they involve.

'Mixed methods' for policy evaluation were identified as one source of research needs. Policy researchers saw a pressing need to combine quantitative and qualitative methods on the grounds that treatment effects need to be both measured and accurately identified. That is, in addition to knowing the size of a treatment effect, information is also required about the process or processes giving rise to it. This identification was seen as a contribution of qualitative analysis. One policy researcher added that cost-benefit analysis of policies can receive too much attention to the detriment of the broader social understanding of interventions. The general question of how to combine disciplines and break down boundaries arises here as a special case. One suggestion was to set up a demonstration project to show the potential of mixed methods in evaluation to funders.

Specific evaluation methods singled-out for attention by policy researchers included randomised controlled trials (RCTs). One stakeholder reported a tendency for UK researchers to borrow from American models of understanding RCTs, along 'medical model' lines. They stated that work should be done to appraise the method in a social rather than a scientific context. The example was given of a benefits office used in a trial. Asking employees to randomly offer and not offer certain assistance to different clients changes the usual relationship between the employee and the public.

Another research challenge raised by RCTs that this stakeholder identified was the Hawthorne effect, since it is a threat to validity that is widely cited but routinely set to one side in analysis. They thought that trials which tell people they are in the experimental area being observed by monitors are likely to make people feel special. However, this does not translate to a policy context since everyone has to implement national policy. In addition, competent people tend to be selected to implement trial interventions, whilst in the real context less competent staff have to enact the policy too. This stakeholder reported that these and related pragmatic 'real world' concerns need to be investigated to see how important they really are instead of being 'forever set aside'.

That researchers disagree over the appropriateness of RCTs in a social science context was emphasised in section 1 of the report by NCRM's 'Methods for Research Synthesis' (MRS) node (see appendix), with respondents from health and social care, and education research. MRS cite similar issues regarding RCTs to those raised in the previous two paragraphs. Some questioned the appropriateness of a 'medical' model to a social context, others were more enthusiastic. An additional criticism to those already reported was that randomisation is highly problematic outside a clinical context. One researcher opined that there are often onerous resource implications if one is to achieve *bona fide* clinical standards of randomisation for policy trials, and that therefore RCTs should be resisted.

One policy researcher identified 'realistic evaluation' as an alternative method. This is an approach to evaluation which emphasises the context-dependence of causal relationships in the social world, drawing on the philosophy of 'critical realism.' This stakeholder expressed reservations about realistic evaluation on the grounds that policy makers need to know about overall effectiveness, but would like to see more methodological work to critically evaluate this approach, to ascertain how valid it is and in what circumstances it might have value.

'Action research' was also highlighted. This generally refers to a process of reflection by participants in organisational or social change which is integrated into the actions taken to secure it, in a cyclical manner. It therefore involves researchers as participants, or *vice versa*, in policies or programs. The appeal of action research was seen as deriving partly from the policy community's requests for evaluation procedures which are built into the design of an intervention. The interviewee raised action research in connection with multi-faceted interventions, such as the Sure Start program for children, which combine related initiatives. This raises an attribution problem for conventional evaluation since the effects of different strands need to be disentangled. It was felt that action research enabled flexibility on the part of researchers and programs and was therefore suited to integration, and that research could usefully contribute to tailoring it for the evaluation of multi-faceted interventions. A consultant with local government experience commented that a methodological issue here, arising from practice, was to what extent participants should receive training in order for the results to carry status alongside conventional techniques, and to reduce the risk of inconsistent results.

One stakeholder with experience of government-commissioned research was of the opinion that qualitative observational studies should serve as inputs to evaluation. This interviewee was of the opinion that government tended not to commission observational studies, in favour of interview and focus-group research. This was partly because of concerns about rigour but also because it is easier to manage research using familiar techniques. The stakeholder felt there is a need to develop observational techniques that are rigorous and robust in the positivist sense favoured by government. An area in which they felt observation might be particularly useful was in the evaluation of services, where perceptions of clients and providers tend to differ. A particular challenge raised was how to develop secure means of observational data collection that met standards of rigour and auditability. It was suggested that social science could learn from how observation is used in clinical contexts, with their emphasis on using agreed and validated ways of capturing what is observed. Examples were given of cooperative observation and inter-rater checking methods.

Finally, one researcher reported that resource constraints on organisations required to undertake evaluation work often resulted in *ad-hoc* work of questionable validity. Partly this involved unsystematic sampling using internet-based techniques. There was also a tendency to count outputs rather than attempting more ambitious but potentially more useful assessments of

long-term outcomes or even quality of service. There were also pragmatic measures adopted such as service users' self-evaluating. (In a similar vein, other researchers called for the identification and dissemination of realistic 'quality standards' for evaluation research.) The same researcher emphasised that for some purposes anecdote and self-reports might be useful and methodological work could be done to support it. The example was given of repeat users of health services whose observations have potentially expert status.

The above points relate mainly to *ex-post* evaluation of policies or other interventions. Further points were raised in relation to *ex-ante* evaluation. Policy researchers and academics saw a need for research into methods for investigating attitudes as an input to policy evaluation. There are innovative techniques that government is starting to explore that require critical examination, which aim to help people form or express a view. Some techniques involve a perceived trade-off between rigour and meaning / relevance. Therefore there is a need for methodological work to draw the boundaries of useful pragmatic research that incorporates a sufficient degree of rigour. The methods in question are set out in the next four paragraphs.

Two researchers highlighted deliberative fora such as 'citizen's juries,' which combine exercises to inform the public about and assess their attitudes towards complex policy instruments and issues. The need for such techniques is seen as deriving from the fact that public engagement in policy design is viewed as desirable but the public need to understand what they are being engaged in. Also people may not have clearly defined attitudes prior to the engagement exercise and acquisition of information. Informative consultation methods therefore need to be explored, which enable people to develop a view.

Another such issue is the use of marketing techniques such as 'concept boards' which are used in product design. These explore people's perceptions of products through metaphor rather than literally, since people often find it difficult to articulate those perceptions literally. Public policy instruments such as pensions, it was argued, generate similar problems because they are complex and remote from present concerns. The parallels and potential cross-fertilisation between market and social research problems / techniques should therefore be explored. Two researchers singled out attitudes to risk as a case in point. Car manufacturers have emphasised benefits rather than dangers in promoting vehicle safety features, whilst government campaigns on, say, smoking typically provide information about risks despite the fact that people often seem to have a good idea of the dangers involved. One of these researchers felt that better techniques for investigating attitudes would also help to connect empirical and theoretical literature on bounded rationality. This would inform the question of whether more choice is socially desirable or whether companies can extract profits by overwhelming people with information. Another substantive area where exploration of attitudes was held to be particularly important was 'sustainable development,' where a gap is often identified between the values people espouse and their actual contributions to environmental public goods.

Additional pragmatic *ex-ante* techniques were mentioned for 'hard to reach' groups. These included 'snowballing' sampling methods to secure their representation, and techniques to facilitate communication with people who are isolated from mainstream society and perhaps less educated, such as 'ice-breaker' techniques. These were seen as potentially important both for securing comprehensive community involvement in the general policy process, and specifically for tailoring policies which either target marginalised people or which happen to affect these groups in particular. Research is needed to assess the benefits of these methods since they involve a departure from rigour. For example snowball sampling is clearly a large departure from random sampling.

Returning to the matter of exploring attitudes, one consultee argued that the concept of measurement was problematic in the context of qualitative attitudinal data, because one is not observing 'the same' thing from case to case. This is problematic because statistics is a science based on repeated measurement of the same phenomenon. The example was given of happiness; it is not clear what constitutes observing the same thing comparing happiness now and 30 years ago. This respondent called for serious methodological inquiry into 'how to measure qualitative information.' Another researcher was of the opinion that research would pay into how to measure quality of life / happiness, giving the reason that happiness was the 'outcome of outcomes' and therefore of enormous interest to policy researchers. Another researcher pointed out however that there exists a considerable amount of research on this issue, particularly in psychology.

A further qualitative research issue arises in connection with case study methodology. This is of general relevance to evaluation, particularly in the context of studies of organisations. The issue was the need for better methods to interpret reality based on the evidence provided from different perspectives, such as employer and employee, since these can provide contradictory points of view which the researcher struggles to reconcile.

One stakeholder commented that cost-benefit analysis of various methods for policy analysis would be useful, given that evidence would ultimately be presented in reduced form to policy colleagues. This stakeholder felt that the detailed and expensive analysis academics were interested to achieve was not necessarily in tune with the pragmatic needs of policy research.

A commentator on the first draft of our report noted the association of evaluation methods with the evidence-based policy movement, suggesting that the latter could itself be evaluated. Issues raised were whether evidence-based policy is consistent with social science models of organisational change and whether it has acted to stifle innovation.

3.2 Comparative Research

The development of comparative research methods was an issue raised independently by several key stakeholders in interviews (it was not identified in questionnaire responses). Additionally, the ESRC asked the NCRM to explore stakeholders' views about the need for research on this topic to inform their consideration of an initiative in the area. In order to explore this, in cases where this was not raised by respondents consulted face-to-face, their views on this topic were explored at the end of the interview. Almost half of the people consulted expressed views about the importance of methodological research in this area. The need for comparative research was identified as necessary in relation to cross-national comparisons, primarily in relation to survey research, as well as cross-cultural comparisons.

Survey Research in European Contexts

Stakeholders identified a substantial research programme on survey research in European comparative contexts. The UK has been at the forefront of survey research and the importance of UK social scientists leading developments in this area was regarded as crucial. Two key issues emerged, *translation* and *modes of data collection.*

In relation to *translation*, it was noted that substantial work is needed in relation to the translation of questions in questionnaires and cultural differences in understanding and

interpretation in a European context. Translating words and terms to ensure they mean the same and knowing when this has been achieved was identified as problematic because of the cultural differences in the ways that words are interpreted and understood (e.g., the term 'democracy' has a different meaning in different countries' cultural contexts). Issues of translation were identified as critical in relation to cross cultural measurement to ensure that measurement of the same issues is conducted. Linguists were identified as having a very important role to play in the translation of questionnaires and it was noted that a research agenda should involve social scientists working with the humanities to help solve some of these social science problems. Part of this research agenda should comprise the development of protocols of translation. The EC is funding some work on this but a need for further developmental work in this area was identified.

In relation to *modes of data collection,* it was noted that there is a significant programme of research that needs to be done exploring mode effects. This work is particularly important in comparative research in a European context in that very different methods of data collection predominate in different Countries (e.g., telephone interviewing is the norm in Scandinavian Countries while face-to-face is the norm in the UK) but there is little knowledge about the impact that these different modes have.

Other issues relating to survey research in European contexts concerned *sampling, response rates and analysis.* A need for research to explore the impact of the differing strategies open to researchers in different countries for sampling respondents was noted as important as was the impact of differing response rates across countries. In terms of the analysis of comparative data, it was noted that there are not the methods available to identify the contextual influences behind differences in findings between countries, such as, type of Government, the institutional framework and the historical context. There are not statistical models to take important country-specific complexity and context into account but there is a real need for their development. One stakeholder gave the following example:

"One example would be explaining female labour market participation. You might have individual level differences between observations and four countries giving rise to country specific effects. How do we interpret those effects? Is it historical context, labour market differences in flexibility, tax regimes? They are all important but how could one separate out the effects? This is a real puzzle." (Academic)

It was noted that these and other issues could fit into a programme of research on comparative methods.

Comparative Research in Policy Contexts

In policy contexts the importance of cross-national comparative work, primarily in European or North American contexts, was noted. This was seen as important for policy making in the UK since challenges arise in comparing and evaluating policies across countries with cultural, social, political and economic differences. The need for more research on this topic was noted. Finding ways to make meaningful comparisons across countries but with sufficient flexibility to allow the research to be meaningful in a national context is seen as a particular challenge.

Cross -Cultural Comparisons

Varying views were given about the importance of developing methodologies for conducting cross-cultural comparisons. Some stakeholders felt that social scientists have insufficient knowledge to undertake European comparisons effectively and that efforts should be

concentrated on developing methodological knowledge in European contexts before moving to comparisons with countries with very different economic and social systems. In general, most stakeholders raised issues about comparisons in European or North American contexts. However, one stakeholder in particular noted the importance of developing methodologies for undertaking cross-cultural comparative research. This stakeholder identified a range of research topics in this area: the secondary analysis of cases within a comparative framework; issues emerging from multi-sited ethnographies; examinations of dependency with specific policy regimes in a comparative framework; methods being developed in geography in relation to networks and interchanges; and, methods aimed at strengthening the ability to combine qualitative and quantitative work within a comparative framework. The importance of work in this area was seen as crucial in enabling UK social scientists to participate centrally in addressing some of the central agenda issues in global social science. Such work is being undertaken in the US (Charles Ragin's work was identified by several stakeholders) and it was noted that there is a need for UK social scientists to 'catch up' with this.

The lack of international longitudinal data sets was also noted as a barrier to comparative research. A need was identified for more focused surveys which cover sociological topics which are common across countries, such as ethnicity, immigration and gender. Consultation by the BIAS Node noted the need for the collection of longitudinal data in developing countries.

3.3 Mixed Methods

The development of mixed methods research was an issue raised independently by a number of respondents, both key stakeholders and questionnaire respondents as well as two Node Reports. Additionally, the ESRC asked NCRM to explore stakeholders' views about the need for research on this topic to inform their consideration of a possible new initiative in the area. Where it was not raised by respondents consulted face-to-face, their views on this topic were explored at the end of the interviews conducted by the Hub.

The term 'mixed methods' can comprise a range of different types of data, approaches and designs (see Brannen, 2005: www.ncrm.ac.uk/publications/methodsreview/MethodsReviewPaperNCRM-005.pdf.)
It can mean mixing qualitative and quantitative approaches in a single study, mixing different types of qualitative *or* quantitative approaches in a study or mixing data from studies using different data collected independently at different time points. All of these activities were raised by participants

Mixed methods: integrating methods in single studies
The importance of developing mixed methods approaches to address substantive research problems was identified as important by those consulted. Some stakeholders were critical of the agenda of mixed methodological research in relation to integrating qualitative and quantitative data in that they viewed constructing data in this way as perpetuating a division between qualitative and quantitative research. However, others noted a clear need to develop methodological understanding and practice on combining qualitative and quantitative approaches in single studies in ways that comprise true integration of data. While 'mixed methods' research is common practice, especially in some areas of applied policy research, such research tends to comprise qualitative and quantitative studies conducted in parallel rather than integrated data collection and analysis. The importance of identifying ways of integrating

qualitative and quantitative approaches in single studies was identified as particularly important (although not exclusively so) in relation to the evaluation of policy interventions in which the combination of qualitative experiences and quantitative measurements of change are seen as increasingly important. A comment from a policy stakeholder illustrates these points:

"We are very unsophisticated at bringing together different research methods on individual studies. I don't think the level of debate about it in the literature is very sophisticated and I don't see many examples of studies that have bought together different research methods and different types of data really well and really made it more than the sum of their parts". (Policy researcher)

As well as developing methodologies to combine qualitative and quantitative data, a number of respondents identified the importance of combining different types of qualitative or quantitative methodologies within single studies. The notion that 'mixed methods' comprises mixing qualitative and quantitative methods was criticised by several stakeholders who noted that substantial developmental work needs to be undertaken on integrating different quantitative (or qualitative) approaches and that this should take precedence over developments in quantitative and qualitative integration.

Research to develop integrated mixed methods research was identified by some researchers as a need in relation to substantive topics and concerns rather than in the abstract. It was noted that some research topics are particularly appropriate for mixed methods approaches, such as policy evaluation as well as research on climate change and genomics. However, research using mixed methods was identified as more expensive and time consuming to conduct than single methods studies and respondents commented that the ESRC should take this into account in funding schemes. However, not all researchers were supportive of integrating methods, with some feeling that the contribution of mixed methods was primarily a matter of *triangulation*, that is, corroboration and broadening of understanding of results using multiple techniques.

One respondent also identified an ongoing debate between predominantly North American researchers, who tended to argue for strict rules to be laid down for the combination of methods, and opponents such as Hammersley and Bergson-Basle who take the view that this will make mixed methods research inflexible.

Mixed methods: integrating qualitative and quantitative datasets

A related issue concerns the integration of qualitative and quantitative data sets drawn from studies conducted independently of each other (the issue of data linkage discussed in section 3.4 below is also relevant to this). There was considerable support for developments in this area and it was noted that the UK is well positioned to take the lead in this given the significant data resources archived by ESDS. Stakeholders commented that little integration of different qualitative and quantitative data sets on similar topics is conducted because of a lack of research on how such data sets can be analysed and compared. Some stakeholders noted the importance of finding appropriate ways to integrate datasets in order to inform policy and practice. It was noted that there is significant developmental research to do in this area, some of which has begun to be undertaken though the NCeSS research agenda (see http://www.ccsr.ac.uk/methods/events/Mixed/programme.htm) but for which there is substantial scope for further development and evaluation. The access to data enabled by Grid

technologies is seen as having the potential to enable researchers to work with computer scientists to develop tools to integrate different forms of qualitative and quantitative data.

3.4 Data Linkage

'Data linkage' emerged from both interviews and Node consultations as a key methodological area that research funds should target in the future. The phrase refers to methods which combine data arising from different databases. The report from NCRM's 'BIAS' node (see appendix) provides a useful schema for classifying data linkage exercises according to the type of data to be linked:

- Survey and administrative datasets (including repeated linkage at intervals to 'update' variables in case where datasets are longitudinal)
- Different administrative datasets
- Qualitative and quantitative data
- Individual and area data
- Spatial point-based and area-based data

Academic and policy researchers most often mentioned linkage with administrative data in mind (i.e. the first and second items on the list above). For example, one might have collected bespoke survey data from a sample of individuals which could in principle be linked to their social security data, which would also contain a wealth of other information, for example detailing their employment history and income trajectory. Several interviewees mentioned that impressive research has been done in Scandinavian countries using linkage with administrative registers. However, respondents reported that the potential for linkage to administrative data is still largely unexplored. Respondents also pointed out that a vast amount of individual-level data is nowadays collected commercially that is under-utilised for research.

The importance of data linking for our respondents largely resided in its ability to quickly and cost-effectively expand datasets along various dimensions. One respondent reported that advances in dynamic simulation, an important policy analysis tool, depend on advances in data linkage. For this we need the longitudinal data necessary, to calibrate the models and to see what is predictable and what not, now rather than in 20 years' time. This requires generating retrospective data which should be possible using data linkage.

A second application was the example of targeted screening for health care interventions, illustrated with the example of Finland. Finland used to have one of the worst rates of cardiovascular disease in Europe but now has one of the best, thanks partly to statistical identification of people at risk. This was done with detailed population registers. In the UK such registers do not exist, but linking to data such as social security and hospital episode data may work, saving millions of pounds compared to general screening. Some respondents mentioned that the relative advantages of administrative data were likely to increase given quality problems caused by increasing non-response rates in surveys, and that counteracting this is costly.

There is also interest in the use of data linkage to handle missing data, for example government statistical agencies with access to tax records for businesses may seek to use these records to impute values of financial variables when these are unavailable from survey sources. More research is needed on such use of linked data to overcome missing data problems.

Whilst the additional data potential from linkage is of general importance, respondents identified various other substantive areas of research that would benefit from methodological development. These included health epidemiology, health inequalities research, the identification of neighbourhood effects, and migration research through better figures for stocks and flows of migrants. Also, respondents noted that ONS would like to move away from producing statistics based on census data to ones based on administrative records. If so, data linkage has implications for data used across the community of users and practitioners of social scientific research.

The research issues raised surrounding data linkage were manifold. Firstly the statistical properties of linked data need to be better understood, so that, for example, one knows how to calculate confidence intervals from linked data, and which specific biases may arise. This concerns in part the quality with which linkage can be achieved. Consultees' examples of problems here included coincidence of names in registers and definitional problems, for example when two data sources define a unit of analysis (household, firm etc.) differently. Special problems arise when both datasets are longitudinal with repeat linkage at intervals to be updated, which gives rise to a 'moving target.' Another aspect is how to characterise the sampling frame and sampling process when data are combined from distinct complex survey designs. There is also the question of different exclusions and omissions from survey and administrative data. Policy researchers emphasised, for example, that persons at the margins of society tend to avoid coming into contact with 'the system' and are therefore under-represented in administrative data.

Both academic and policy researchers were keen to emphasise that important technical issues such as those outlined in the previous paragraph should not distract attention from issues of data quality. Examples were given where it was felt that the potential for added quality was clear – where administrative data collects very detailed information, for example, as with the extensive income information in social security data. It was also claimed that the UK has some high quality administrative data, examples given included data arising from episodes of hospitalisation, social security claims and mortality data. However, there were widespread concerns about the general accuracy of administrative data. This was based partly on the fact that the main priority of many departments is providing a service, not data, which may result in poor data collection and in some cases its replacement by retrospective estimates. Several reported a belief that the general quality of UK administrative data was likely to be significantly worse than that in many Scandinavian countries or other comparator countries such as the Netherlands. Therefore there is a perceived need for research into the quality of the UK's administrative data to discover what is usable and what is not. Likewise, it was stated that the shortcomings of census data do not imply that figures collated from administrative data will be superior, and that experience with recent initiatives such as '*e*-borders' (a home-office initiative involving swiping passports) should be exploited to assess potential. Issues concerning linkage to administrative data are also highlighted in the recent report by the UK Data Forum (2006) setting out a national data strategy.

Interviewees were generally concerned about complex data protection issues raised by linkage, arising from both ethical concerns such as privacy / disclosure control, and Intellectual Property Rights considerations. The possibilities afforded by new data sources and linking abilities seem to be matched by growing legal restrictions. One respondent stated that ESRC had a lobbying role to play in increasing access to data for research purposes. A respondent with experience of contracting-out research work reported that data linkage provided scope for

opportunism on the part of research partners, since the partner organisation could withhold a dataset that they had enhanced on data protection grounds. An actual case was referred to. A research need voiced here was for the legal situation to be clarified and disseminated via worked exemplars to the research community.

One consultee stressed that there is a need for comparative work, perhaps of an experimental nature, to establish the potential of linking to specific datasets, citing the work of S. Jenkins at Essex University who matched EHPS data to data from DWP and IR to assess the potential for enhanced quality.

3.5 Qualitative Data Collection and Analysis

Qualitative Data Collection

Methodological research needs around the collection of qualitative data related to both traditional forms of data collection and other types of qualitative data collection arising from new technologies.

In relation to traditional qualitative interviewing, it was noted by one stakeholder that there is scope for more research on the context effects of interviewing. These issues have been widely explored in relation to survey research but not in qualitative interview-based research. Questions such as, what impact does the ordering of questions, the style of interviewing or the place of interview have on interview responses are ones viewed as warranting further research. The importance of researching the replicability of interviews was similarly identified by another stakeholder who viewed important research topics to be the exploration of researcher effects and changes in responses from interviewees over time. A further related issue identified was an exploration of the nature of the data that emerges from qualitative interviewing. Following on from some of the work of Silverman, it was noted that an exploration of the discourses that interviews tap into is central to understanding the value and appropriateness of qualitative interviewing. It was noted that there is a dearth of research analysing qualitative interviewing.

A number of stakeholders from both Hub and Node consultations noted the importance of researching different forms of qualitative data collection afforded by developments in technology. Such developments allow interviews to be undertaken remotely using skype interaction, the internet, video conferencing and access grid nodes. Stakeholders noted that research needs to be undertaken to examine the impact that these different modes of data collection have on the data generated. Specific research questions include: do emergent forms of data collection, such as online methods, generate different types of data to 'traditional' methods, such as face-to-face interviews or focus groups and, how do emergent forms of data collection impact on the research design and data collection tools? Comparative studies using different data collection methods, both traditional and emergent, were noted as necessary in order to explore these issues.

A related issue raised by one stakeholder and Node consultation concerned the identification of ways to interview people without language or with language difficulties, such as people with learning disabilities, people who have had a stroke and people with language or hearing impairments. It was noted that new technologies may provide means to include people with varying levels of language ability in interview-based research.

Stakeholders also noted that research will need to address issues of sampling and research ethics that are raised by conducting research via new technologies. In relation to sampling, it is noted that while the internet has the potential for accessing some 'hard to reach groups' it also has the potential for excluding others, particularly older people. A wide range of ethical issues are raised by such research. Some of these are beginning to be explored (see http://www.ncess.ac.uk/nodes/oess) but the emerging nature of the field means there is much further work to be done.

As well as conducting interviews via new technologies, these technologies also provide scope for the collection (and analysis) of different forms of qualitative and textual data. Online discussion boards, blogs, chat rooms and emails provide rich sources of data. A number of stakeholders noted that there is an urgent need to develop methods to manage and analyse these data.

Consultation by the QUALITI Node also identified the need for research on the use of simulations in undertaking qualitative research. It was noted that technological advancements in hardware and software have enabled a range of simulations to be created and that these visual images could be employed in research to provide insight into understandings of attitudes, emotions and beliefs. Research was viewed as needed in order to investigate how these simulations can be employed in traditional qualitative research, what methodological advancements or innovations would be required in order to realise their potential and to begin to understand how these simulations are interpreted and understood.

The use of video and other visual methods (such as photography) in research were also identified as topics in need of further research by Hub and the Real Life Methods Node stakeholders. The main challenge here was viewed as the development of methodologies to combine visual data with text and numbers in ways that do not detract from the intellectual rigour of social science research questions, explanations, arguments and generalisations. In addition, the ethical issues raised by visual methods may imply new approaches and constraints for research methods that need to be explored. Some research on this topic is being conducted by the NCRM QUALITI Node (see: http://www.cardiff.ac.uk/socsi/qualiti/research.html).

A further issue relating to qualitative data collection raised by one stakeholder was the issue of non-response. This stakeholder noted that issues of non-response are widely researched in relation to survey research but very little research has been undertaken on this in relation to qualitative research. It was noted that issues of respondent bias could equally apply in qualitative work and that this has important methodological consequences

Qualitative analysis and interpretation

A range of methodological research needs were also identified by both Hub and Node stakeholders in relation to the analysis of qualitative data. Methodological issues relating to qualitative analysis were viewed as being very under-researched in comparison with quantitative analysis. The most common need identified was for tools to be developed and evaluated for the text mining of qualitative data. It was noted that computer assisted qualitative data analysis software (CAQDAS) is important in maintaining and supporting researchers to conduct qualitative analysis but that there is also a need to develop tools to enable researchers to work in new ways. Developments in computer power have the potential to enable software to be developed to assist researchers in the coding and analysis of large amounts of qualitative data. Such developments were viewed as having the potential to 'scale up' qualitative work and to enable the analysis of large qualitative data sets. These

developments were also viewed as advantageous in linking different types of data (for example observation, interviews, field notes and internet based data such as 'blogs' or data from different studies) and in combining qualitative and quantitative data; these issues are covered further in the sections on mixed methods (section 3.3) and technological development (section 3.9) A related research need identified here was the development of a set of conventions for the synthesis of qualitative data, this issue is picked up in section 3.8.

In tandem with the need for development is the need for research to explore the impact of new tools. Such developments raise research questions such as how software tools impact on the quality of data analysis. This comprises a significant research agenda that developments such as NCeSS have only just begun to explore. The development of software to address these issues was also seen to be advantageous in enhancing the transparency of the analysis process and demonstrating the rigour of the analysis.

A related research need mentioned was for conventions about how to conduct the analysis of visual data to match the technological advances. A contrast was noted between behaviourist techniques originating in psychology and semiotics-based, sociologically-informed approaches also associated with anthropology. One researcher felt the ESRC could usefully commission projects to develop the methodology of the latter.

A further issue identified by the QUALITI Node consultation and one of the Hub stakeholders concerns the generalisability of qualitative research. The legitimacy of translating and transferring qualitative research findings based on one locale to another was identified as a key methodological challenge and it was noted that it is an issue about which there are disagreements within the core social science community. It was suggested that this topic should be researched through a relatively large scale qualitative-based study that would investigate one or more themes across a large number and variety of localities. Identifying ways to establish the generalisability of qualitative research was identified as important in addressing policy research questions as well as in developing rigour.

One researcher who advocated mixed qualitative-quantitative methods for policy evaluation stated that issues of replicability in relation to qualitative research need further exploration and development. Whilst both types of method give rise to variability depending on which researcher performs the analysis, in quantitative research the mapping from assumptions to results can be, and is, rigorously explored. Further work exploring, for example, interviewers' prior expectations on subsequent analysis is necessary.

3.6 Survey Methods

Modes of data collection

Several stakeholders identified a need for empirical research or 'evidence-based critical review' into mode effects. This was prompted partly by a fall in the proportion of data collected face to face, which is driven by its cost relative to new methods, and partly by changing lifestyles. For example face to face surveys based on sampling from the electoral roll are becoming more problematic because of its reduced coverage and telephone surveys are increasingly hindered by the increasing proportion of mobile-only households. The research needs identified concern both the empirical identification and explanation of mode effects. One reason mode effects are of general practical importance was given as the tendency for local

authorities to use postal methods for cost reasons but for national level studies to use face-to-face methods.

The various modes to be systematically compared include telephone and face-to-face, online surveys including online panels, the use of Personal Digital Assistants (PDAs) and interactive television. The issues that arise include ones of coverage and representativeness, specific biases, how the various modes are suited to sensitive questions and confidentiality. Where multiple modes are used special issues arise concerning coverage and the relationship between linked samples and underlying populations; we refer readers to the 'data linkage' section of this report.

Regarding online panels, the enthusiasm of some researchers following the recent success of the 'YouGov' poll and increasing commercial availability of such data was matched by concerns over, for example, representativeness and whether belonging to a panel conditions responses. One survey researcher reported that the known advantages of probability sampling needed to be restated, since the exclusions from online panels are significant ('there are not many 85 year olds online'), whilst it is often argued that the size of the datasets allows researchers to select observations along any attribute. The same researcher also opined that since much was known about how to boost response rates there should not be a rush to automatically adopt new methods. Another concern raised about online data collection was that the surveys are asynchronous; one does not know that one person is responsible for one response. So validity becomes an issue within a unit of observation.

One researcher called for the development of a typology of survey questions by portability across modes. To achieve this it was felt that the explanation of mode effects was important. For example it is known that people are more likely to rate the desirability of their neighbourhood differently using different modes for reasons probably related to image management, but it is not really known which mode is more accurate or why. Two routes into this problem were identified as in-depth qualitative interviews and tracing the consequences of social scientific theories for data collection. This research should also address how questions can be better designed to achieve portability, rather than being carried over from face-to-face surveys.

Non-Response

A second set of issues concerns falling response rates. Consultation fatigue, declining response, and panel attrition were problems raised by respondents across the community of stakeholders we consulted. Firstly some researchers felt that there were research needs into the use of incentives to boost response rates. One reason was that most of what is known relates to incentives for individuals rather than organisations. Another reason is that the nature of incentives required changes over time and researchers need to keep up with this. Secondly there were issues raised concerning non-response bias, which is affected by falling response rates. Measures to boost response rates are of limited value if one obtains 'more of the same.' One survey researcher reported that how to access 'hard to reach' groups is therefore a research need for survey methods. Thirdly, some stakeholders felt that more research was needed into why people do not respond and how to get them to. One reported that 'cognitive script theory' might be of help in addressing this, since the person's automatic framing of a situation will determine their response. Finally, one researcher called for a cost-benefit analysis of different measures to tackle non-response bias, comparing collection-level intervention to boost response and statistical intervention to adjust for non-response.

Other issues that respondents raised included the methodology of 'responsive design,' whereby survey design responds to developments as data collection takes place. One respondent felt that the UK is lagging behind the US in expertise in this area.

One respondent gave the opinion that there is continual need for research to trace the consequences of social change back to methods of data collection. For example, because of globalisation the working definition of a 'resident' needs to change for migration statistics. Also the age structure of the population is changing with implications for survey design and analysis.

3.7 Longitudinal Methods and Spatial Analysis

Longitudinal Methods

A number of stakeholders (including Node and Hub consultation and questionnaire respondents) identified the need for research in relation to longitudinal methods.

Methods of analysis for longitudinal data were viewed as in need of some development in order to make them applicable to social scientists. Those identified included multilevel modelling and event history analysis. In relation to multilevel modelling, stakeholders identified a need for extensions of multilevel models to handle multiple time series, spatio-temporal data, simultaneous processes, event histories and clustered data. Methods for model checking in multilevel models and application of Bayesian multilevel modelling methods were also identified. In relation to event history analysis, one stakeholder noted that methods are needed to examine a combination of events and factors over the life course to explore the impact that variable sequencing of events and their duration have on other lifecourse events. It was noted that events in combination may have impacts that cannot be inferred from their impact in isolation. One of the Node consultations (BIAS) noted the need for the development of methods for estimating change over time in social variables and the impacts of bias, missing data and measurement errors on longitudinal estimates such as change and survival.

Using information from longitudinal studies to make simulations was also noted by one stakeholder as an area in need of development. It was noted that there is a need for methods to enable researchers to project forward the effects of events both spatially and temporally. Such simulations were seen as useful in relation to the micro-level of individual and family. One example given was using the information from longitudinal studies to age individuals. It was also noted that spatial modelling can be incorporated with data from longitudinal studies to explore the mapping of deprivation.

The need for research relating to qualitative longitudinal research was noted by two stakeholders (one interviewee and one questionnaire respondent). However, little detail was given about what this might comprise other than to generate awareness of the issues relating to appropriate methods of data collection and analysis and the range of ethical issues associated with qualitative longitudinal research. The ESRC has recently invested in a qualitative longitudinal study initiative.

Spatial Analysis

Two key stakeholders asserted the importance of further development in analysing data with spatial structure. It was noted that such data causes specific problems because spatial autocorrelation is not always evenly spaced, implying that the techniques developed for time

series data are not appropriate. One stated that interdisciplinary work between geographers and statisticians would be beneficial here. It was also noted that developments here may benefit the analysis of feedback effects in general equilibrium in economics.

Spatial data analysis also features prominently in the BIAS node's report (see appendix). This notes the same problem, of modelling spatial dependence, and also cites scale issues and the problem of estimating distributions of area statistics.

3.8 Research Synthesis

NCRM's MRS node noted the following research needs in relation to systematic review; first, there is a perceived need to bridge social science and health methodologies, in particular to incorporate controls for social context; second, the impact of the reviewer's choice of methods on the outcome of narrative reviews is not well understood; and finally, work needs to be done to facilitate the synthesis of qualitative research.

Two interviewees outside academia raised matters related to research synthesis. Both noted that resource constraints generally prevented the conduct of gold-standard systematic reviews. Reviewing was however seen as an essential precursor to research and especially commissioning research. One of these stakeholders saw a need for developments in systematic qualitative review.

3.9 Software and Technological Developments

This section concerns software and other technological tools that stakeholders thought needed to be developed to enhance research methods in use.

Regarding software, several stakeholders stated that more research needs to be done to develop and evaluate text mining methods. This was seen as an example of a way in which quantitative and qualitative research could be bridged. One application of this would be to facilitate the coding of free-response questions in social surveys, which is currently onerous manual labour. Similarly, the development of tools to aid coding and analysis of qualitative data was viewed as having the potential to transform qualitative research. Other applications cited were the analysis of interview field notes, the synthesis of literature and the enabling of data-sharing.

Similarly, several stakeholders reported a need to analyse visual material using software. One example a respondent gave was automatic coding of CCTV footage to measure flows of pedestrians or traffic. Another example from the QUALITI node is the use of visual methods to study attitudes. One respondent saw the development of visual methods as a key area for the future on the grounds that research paradigms tend to follow technological affordance rather than epistemological arguments. Another noted that whilst it is common to work with visual methods in areas of psychology, there is a lot of developmental work to be done by the other social sciences. These issues are also highlighted in the report from NCRM's 'Real Life Methods' node (see appendix).

Advances in this area included Transana and Atlas.ti software packages. But there is scope for further technical improvements. For example, one respondent noted that annotation of

streaming digital footage is now possible using networked PCs, and that this is important for workplace interaction analysis. But this is not yet reliable enough for research purposes.

Regarding statistical methods, one academic respondent stated that tools need to be developed that enable an analyst to move more freely between data handling and modelling. It was felt that modelling abilities have outstripped users' data handling abilities. The skills currently needed to handle, for example, event history analysis are onerous, because one needs to know the assumptions of the model and the way in which the software stores and reads data, and to be skilled in handling data. This perceived need was also reflected in one of the questionnaire responses which complained that there is a dearth of people with the requisite skills, and an interview with a stakeholder who emphasised the need to train researchers in data handling for complex longitudinal models.

The Lancashire/Warwick node of NCRM reports a perceived need for better data visualisation tools for use with complex data. This would enable an analyst to obtain a better feel for the data to facilitate 'model fitting.' They also report a need for better graphical representation to be developed of complex models themselves, a need which was also cited during interviews. We refer the reader to the appendix.

One stakeholder was of the opinion that advances in computer power would enable the analysis of huge datasets in the near future, implying a scaling-up of quantitative research. This would be facilitated by advances in data-linkage, and would enable much larger statistical models to be estimated. This stakeholder noted that developmental work is still needed to achieve this and evaluative work to assess whether it provides better answers to research questions.

Finally, at the interface of quantitative and qualitative methods, it was noted that there is an epistemologically controversial use of software to 'quantitise' qualitative data, associated with Pat Bazeley. There is a perceived need for research about what is gained and lost by turning qualitative data into a set of variables, but also over the reliability of the resulting analysis and to develop measures of validity.

3.10 Agent-Based Social Simulation

Respondents referred to various simulation methods during our consultations. One that we received detailed feedback on was agent-based social simulation (ABSS). This is seen by its practitioners as providing tools for a new way to do social science, for example by exploring the consequences of agents' interacting with and influencing each other in ways that go beyond the constrained optimisation of economic theory. A 'new wave' of ABSS was referred to current in Europe and the UK, which tends towards a problem-based or evidence-based approach rather than starting from a discipline-based theoretical stance. Developing this kind of ABSS was seen as a means to delivering on mixed-methods research and interdisciplinarity.

Research needs identified within ABSS were the following: whether to start with an abstract representation of a problem / process or with evidence, whether numerical or linguistic representations of qualitative phenomena are appropriate, and whether achievements and outputs of ABSS offer lessons for social science generally.

Regarding the first issue, it was noted that ABSS modellers tend to produce models in which social embeddedness and agents' threshold behaviour combine to produce episodic volatility. It

is not known whether this reflects the widespread conjunction of these factors in reality or the favoured techniques of social simulation modellers. There is agreement that models should be validated by qualitative data at the micro level and statistically at the macro level, but the formalisation of this validation has yet to be developed.

The second issue arises from the fact that qualitative data can be represented linguistically in the models but the output is generally numerical. There is disagreement about whether qualitative phenomena can be numerically represented and if so how. For example, in the opinion dynamics literature, opinions as are treated as real numbers in the unit interval with associated probability distributions, but this leads to different results depending on which functional forms are used. Differences can also be significant merely from choosing between floating point versus real-number arithmetic. These problems suggest the transition from linguistic data to numerical representations is problematic. An alternative school of thought is that ABSS can model qualitative responses to qualitative signals, and that this should be developed, though there are limits posed by computational capacity. It was felt that research would pay into the costs of 'quantitising the qualitative' in various ways, using ABSS to explore this rigorously.

The third set of issues includes whether ABSS can be used to inform policy, in cases where predictiveness is not a property of the models, by using it in conjunction with stakeholder role-play exercises to develop narrative scenarios. Initial work using this method has been carried out at CIRAD in France, and there is a current EU research project CAVES using these techniques. Secondly, there are at present only primitive means of comparing numerical outputs from ABSS models with social and economic statistical data. It follows that better techniques for validating the models are a pressing research need. It is important that progress is made on this front because the outputs from ABSS are often in conflict with equilibrium-based social science such as economics and econometrics, because ABSS models often generate episodic volatility and strong outliers.

3.11 Interdisciplinary, Multidisciplinary and Cross-Sector Working

Issues of interdisciplinary, multidisciplinary and cross-sector working were raised by a range of stakeholders both in interviews and questionnaire responses. Mixed methods constitute one aspect of this, discussed above (see section 3.3). There was a general view that disciplines need to work more closely together in order to develop methodologies and research in substantive topics. There were also some issues raised about whether interdisciplinary or multidisciplinary approaches were most appropriate for such development.

Regarding cross-sector and cross-discipline working, a recurring theme raised in the consultation was the importance of researchers from different disciplines and different sectors (e.g., market researchers, Government researchers) working together to critically assess, examine and *develop* the methods they use. It was noted that researchers in different disciplines and sectors may use different methods to address similar issues or may use similar methods in different ways. It was also noted that there is much ignorance about the achievements and traditions of other fields within social science disciplines. The example was given of happiness, which economists have recently begun to study but which has been the province of psychology for a considerable time. Collaboration was seen as central in enabling new approaches to be developed. Some stakeholders felt that developing models of interdisciplinary working had methodological importance in its own right – that is, to enable the development of research

methods through the critical exchange of ideas and practice. The development of methods and collaboration through interdisciplinary and inter-sector engagement implies a need for the establishment of networks and network-based activities. Our consultation indicated that funding opportunities specifically aimed at developing such engagement are called for.

A questionnaire response from one ESRC Centre noted the importance of developing models of multi-disciplinary working in order to bring about methodological development. While it is noted that there is a lack of clarity in definitions of interdisciplinary and multidisciplinary research, this response noted that interdisciplinary has come to mean specific disciplines working together (e.g., social scientists) or one discipline working with another discipline. They argue that, in order to address important social questions, especially those relating to social impacts of emergent technologies, there is a need for multidisciplinary models which incorporate multiple actors including social scientists, scientists, regulators, the public and other actors within civil society. They note that the development of new models of multi-disciplinary research will be a key strength for UK social science capability which will allow for effective cross-disciplinary participation and European and international collaboration. However, they note that there are problems in developing such models relating to disciplinary exclusivity, resistance to multidisciplinary work and technological and methodological difficulties in linking different types of data and different types of methods. The research agenda is identified as one of the development of capacity and methodologies for multidisciplinary research.

The view that multi disciplinary models of working are necessarily superior to mono-disciplinary models was not uncritically accepted by all stakeholders however. It was noted that there is a need for further research to compare the quality of research that comes from multi disciplinary and mono-disciplinary approaches and models of working. One stakeholder stated that the benefits of inter- or multi-disciplinary over mono-disciplinary approaches tended to be presumed rather than reasoned or evidenced. They stated that research showing its advantages and/or how to do it well, such as a demonstration project, is necessary.

3.12 Research Practice, Innovation, Teaching and Learning

This broad area covers a range of linked topics identified by stakeholders consulted through the Nodes, the Hub and via questionnaires. It comprises issues relating to the needs for research on the ways in which developments (or innovations) in research practice occur and the responses researchers make to such developments, the ways in which best practice in research can be transmitted, the ways in which researchers learn and the ways in which research methods should be taught.

Dissemination of Good Research Practice

One stakeholder noted that there was scope for considerable work to identify 'best practice' via synthesis and dissemination of existing research on methodological issues which have generated specialist literatures. Topics such as survey non-response, missing data, sample selection bias and the identification of spatial effects are ones on which there is ongoing debate among specialists and which leaves many social researchers unsure of what should constitute best practice in the area. Research to examine existing work, synthesise this work, disseminate it and develop ready made software in order to implement it is needed. Some projects funded within the Research Methods Programme (RMP) provide examples of the type of work that is needed (see e.g., Kenward and Carpenter's work on item non-response in surveys:

http://www.lshtm.ac.uk/msu/missingdata/index.html). This work needs to be done to reap the benefits of what is already known.

The same stakeholder noted that it was particularly important that the conceptual complexity of cutting edge methods was conveyed to Government Social Research and applied settings given the current emphasis on evidence-based policy and policy-relevant research. This need was also emphasised by another stakeholder who had undertaken work commissioned by Government.

Methodological Innovation

One stakeholder and consultation conducted by the QUALITI Node noted that research is needed on the process of methodological innovation in order to understand how and why some methodological innovations which transform research practice 'take off' at certain points in time while others do not. Part of this area of research includes an exploration of how researchers respond to methodological innovation in general and specific innovations in particular. This research agenda was viewed as central to the development and success of social science. It was noted that without the development of new methods and engagement with new technologies, the UK social science community will fall behind its European and international counterparts and the commercial sector. NCeSS has gained considerable understanding of some of these issues in relation to specific technological innovations but there is scope for further research.

Teaching and Learning

Several stakeholders commented on the lack of methodological skills in particular areas among the social science community and the reluctance, or lack of confidence, among social scientists to develop such skills. This led some stakeholders to note the need for research on the most appropriate and effective ways to teach research methods. Specific areas in which research to identify the most appropriate forms of teaching are needed were noted to be in relation to quantitative methods, longitudinal analysis and qualitative interviewing. It was noted that such research could also consider the apparent resistance to developing quantitative research skills and expertise among many social science researchers. It was also noted that research could explore how research across disciplines is undertaken and thus make a direct contribution to important efforts to promote interdisciplinary research in which researchers need both to retain and use their own expertise whilst also coming to appreciate the expertise of others. Central to this research agenda is an understanding of how social science researchers learn and develop their expertise. It was noted that without this understanding any attempt to build research capacity will be limited.

3.13 Substantive Issues

A number of stakeholders noted that the most appropriate way of advancing methodological developments in particular areas is through demonstrator projects or projects in specific substantive areas. Consultation from one of the NCRM nodes (Real Life Methods) opined that the way to take this forward is to engage experts/leading edge social scientists with expertise in different research methodologies and substantive research domains and disciplines to work around substantive areas where a lack of working across methodological or disciplinary boundaries is limiting what social science can offer. The aim of this would not be to promote a mixed methods agenda but to extend the range and scope of methods to address specific substantive topics.

In terms of specific substantive areas in which methodological research is needed, one stakeholder noted, following a meeting of researchers to identify these, that there is no consensus in the academic community on the key substantive areas in which there are methodological challenges. However, in this consultation some stakeholders did identify some specific substantive areas where methodological development is necessary. The difficulty with interpreting these views is that stakeholders are likely to see the key challenges in relation to their own substantive areas rather than taking an overview of the social sciences more generally. Several of the stakeholders who noted the importance of methodological development in substantive areas noted the importance of interdisciplinary working to this development. Specific substantive areas identified included: genomics and the social impacts of new technologies; environmental change; globalisation; new forms of social interaction; family research; and, researching emotional and sensory life.

The majority of substantive topics identified relate to the changing nature of society, technological developments and the environment. These map broadly onto some of the key research challenges identified in the ESRC strategic plan (see http://www.esrc.ac.uk/ESRCInfoCentre/about/strategicplan/), particularly 'the global economy', 'energy, the environment and climate change' and 'understanding individual behaviour and its relationship to biological and social determinants'. One substantive area identified related to genomics and the social impacts of other emergent technologies such as neuroscience developments and nanotechnology, plus the continued convergences between them. A second area identified was in the area of global environmental and climate change. In both these areas the methodological research need was seen to be in relation to interdisciplinary (or multidisciplinary) working; this issue has been discussed above (see section 3.11).

Related to these issues was a need identified by the QUALITI Node consultation for research methods development in relation to science, technology and innovation studies and the impact that new technologies have on the ways in which scientists work with each other. This need was seen as the development of methods to explore the electronic data generated in scientists' interactions with each other (e.g., email, discussion boards etc) in circulating and developing knowledge claims.

A further substantive issue concerned globalisation and the need for the development of methodological expertise to enable UK social scientists to participate in addressing some of the central agenda issues in global social science. The methodological research need here concerns methods for international comparison (see section 3.2) and issues of interdisciplinary working (see section 3.11).

A different substantive area concerned methodologies relating to research with families and in the personal sphere. One stakeholder working in the policy field noted that there is insufficient research on how to conduct and analyse research exploring different perspectives within families. This included the ethical issues associated with such work. The Real Life Methods Node consultation identified a need for social science methods to explore emotional and sensory life. They note that this topic has been the domain of psychologists, social anthropologists and clinicians but that nevertheless there are important questions for other social scientists, such as sociologists, that need to be explored within these domains. However, they note that social science methodologies in these areas are underdeveloped and that there is

a pressing need for the development of more creative methods to access elements of social life which are largely hidden and inaccessible by conventional social research methods.

4. Conclusions

This report has identified thirteen areas where methodological research is believed to be needed by members of the social science research community, broadly-conceived. Four of these emerged as particularly prominent themes: data linkage, policy evaluation, mixed methods and comparative research. Readers should bear in mind though, that the ESRC requested that special attention be given to the last two topics. The other broad priority areas were, in no order of priority, interdisciplinary research, qualitative data collection and analysis, survey methods, longitudinal and spatial analysis, research synthesis, software and technological development, agent-based social simulation, innovation, research practice, teaching and learning and substantive topics.

The thirteen broad topics are mostly reiterative of needs identified in the earlier consultation exercises mentioned at the start of this report. There appear to be two exception to this general picture, under the heading of 'Research Practice, Innovation and Teaching and Learning' and 'Agent-Based Social Simulation' (ABSS). Regarding the former, various consultees mentioned, in connection with a diverse range of techniques, the need for identification and dissemination of 'best,' 'good' or 'good enough' practice or 'quality standards,' which appears not to have been highlighted in the previous exercises we refer to. This seems to be an issue which straddles the distinction between methodological research and training, for there is work to be done synthesising and evaluating developments in frontier research to provide clear guidelines for practitioners. Regarding ABSS, this is an emerging field, particularly in guises which use socially embedded agents rather than constrained optimisers.

The main contribution of this report is therefore to flesh out some current perspectives on the key needs and opportunities under each heading, which could be targeted for research and development. We have also explored reasons people gave why these might be seen as priorities. In comparison to previous reports for ESRC on research methods, the current report is distinctive for its breadth of coverage and consultation, with opportunities for response at the draft stage targeted at research centres and learned societies, plus an open-response opportunity offered via the NCRM website. Responses to the draft stage have, wherever possible, been incorporated into the main text.

Comparisons with previous reports provide some evidence that needs and priorities are changing, and that this report has picked up on certain emphases emerging in the 21st century within the broad topic areas. This seems particularly evident in, for examples, the renewed interest in trial-type techniques in policy evaluation, the interest in use of administrative data via data linkage, and interest in responsive design in survey methods.

Inevitably such a broad consultation procedure has produced a very diverse range of responses. Incorporating these into a coherent report has therefore been a challenging exercise. We have favoured inclusivity over forcing a particular structure on the set of responses. The results should therefore be seen primarily as a resource to be drawn on rather than a distillation of the diverse views into a definitive answer to the question of 'what the social science community views the priorities to be.'

It may not be the case that needs can always be met and this may explain why some of the same themes recur in different consultations, but we have sought to focus on needs that might usefully be addressed by research. Further, some needs are more like opportunities, for example, opportunities to exploit new types of data such as linked administrative data. The report is not intended as a specification for a call for research by ESRC. However, we are optimistic that it might serve as a resource that can be referred to in a call, or could provide a basis for further scoping by the research council in developing a call for a specific methodological initiative.

Finally, as the contents of the report reflect, our consultees often desired to emphasise the importance of dissemination, training and capacity-building. We take this to reflect the intimate relationship between these and research, and consequently the value of developing them in tandem with methodological research. A report on the needs for training in research methods in the UK social science community has recently been produced by NCRM (Wiles *et al*. 2005).

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Appendices

1. **People and Groups Consulted**
2. **NCRM Questionnaire**
3. **Node Reports:**
    - **i) BIAS**
    - **ii) Lancaster/ Warwick**
    - **iii) MRS**
    - **iv) QUALITI**
    - **v) Real Life Methods**

Complete List of People and Groups Consulted

Individuals
Alan Algresti, University of Florida
David Blane, Imperial College, London
Nick Buck, Economic and Social Data Service (ESDS), University of Essex
Roma Chapell, Office of National Statistics (ONS)
Andrew Chesher, Centre for Microdata Methods and Practice (CeMMAP), University College, London
Philip Clarke, ONS
Louise Corti, ESDS Qualidata, University of Essex
Nick Crossley, University of Manchester
Angela Dale, Cathy Marsh Centre and ESRC Research Methods Programme (RMP), University of Manchester
Fiona Devine, University of Manchester
Sue Duncan, Chief Social Researcher, Government Social Research (GSR)
Peter Elias, Institute of Employment Research, University of Warwick
Maria Evandrou, University of Southampton
Andrew Gelman, Statistics and Political Science, University of Columbia
Bob Haining, University of Cambridge
Peter Halfpenny, ESRC National Centre for e-Social Science (NCeSS), University of Manchester
Dominique Haughton, Bentley Business School, USA
Michael Haynes, Department of Social Statistics, University of Queensland
John Holmwood, University of Birmingham
Heather Joshi, Centre for Longitudinal Studies, University of London
Roger Jowell, City University
Ray Lee, ESRC Researcher Development Initiative, Royal Holloway, University of London
Jane Lewis, Natcen
Peter Lynn, University of Essex
Anna Madhill, University of Leeds
Michael Marmot, University College, London
Scott Moss, Centre for Policy Modelling, Manchester Metropolitan University Business School
Gerry Nicholaas, Natcen
Greg Philpotts, ONS
Ian Plewis, Centre for Longitudinal Studies, University of London
Rob Proctor, NCeSS, University of Manchester
Ceridwen Roberts, Social Research Association (SRA)
Mike Savage, University of Manchester
Keven Schurer, ESDS, University of Essex
Mark Speed, IFF Research
Andy Turner, University of Leeds
Jon Wakefield, Centre for Social Statistics, University of Washington
Karl Wilding, National Council for Voluntary Organisations (NCVO)
Fiona Williams, University of Leeds
Diana Wilkinson, Chief Social Researcher, Scottish Executive
Melanie Wright, ESDS, University of Essex

Groups
BIAS Node
Lancaster/Warwick Node and Associate Members
MRS Node
QUALITI Node and Associate Members
Real Life Methods Node and Associate Members
ESRC Research Centres
Families, Life Course and Generations Research Group Members, University of Leeds
Leeds Social Sciences Institute Members (LSSI)
Morgan Centre Members, University of Manchester
Qualitative Longitudinal Email List
Visual Sociology Association

ESRC National Centre for Research Methods

Methodological Research Needs Questionnaire

The NCRM is undertaking a consultation exercise to identify key areas of research need in relation to research methodology.

Needs are to be interpreted in relation to ESRC's strategic objectives "to provide the … methods needed to meet future social science challenges" and "to ensure the availability of sufficient first class capacity, including … methodology, for the UK to undertake top class social science".

Needs may relate to different stages of methodological development: from the creation of new methods, through the development and refinement of existing methods or their transfer across subject areas or disciplines, to the investigation of specific practical applications of methods as exemplars in a training and capacity building context.

Please respond to the following questions about research needs. Please address some or all of the topics, as appropriate to your own areas of expertise. For any needs you identify, please provide as much detail as possible about why this need is important in relation to the strengthening of UK social science research capacity.

1. Substantive research areas

a) What key needs for methodological research are generated by the fields of **substantive social and economic research** with which you are most familiar? These may be needs that emerge from new research questions or from challenges faced within substantive social-economic research.

b) Why are these areas important? What contribution would research in these areas make to social science research capability?

2. Data sources

a) What specific needs or opportunities for methodological research arise from new kinds of **data** or other research resources which are becoming available to researchers or which might become available following methodological development?

b) Why are these areas important? What contribution would research in these areas make to social science research capability?

3. Methods

a) What needs for research are there in relation to **methods.** Needs might be identified from emerging developments and innovations in methods or the need to improve and better understand existing methods.

b) Why are these areas important? What contribution would research in these areas make to social science research capability?

Thank you for completing this.
Please return to nb6@soton.ac.uk

NCRM BIAS Node Report, June 2006

Summary of research needs in quantitative (statistical modelling) methods

We received responses from 12 out of 15 people approached:

Ian Plewis/Heather Joshi (CLS)
Greg Phillpotts (ONS)
Philip Clarke (ONS)
Jon Wakefield (Centre for Statistics in the Social Sciences, University of Washington)
Andrew Gelman (Statistics; Social & Political Science, USA)
Michael Marmot (UCL)
David Blane (Imperial; Social Medicine)
Bob Haining (Cambridge; Geographer)
Peter Lynn (Essex)
Michele Haynes (Social Statistics; University of Queensland; Brisbane)
Alan Agresti (Florida)
Dominique Haughton (Prof of Mathematical Sciences, Bentley Business School, USA)

The NCRM questionnaire was distributed. As we anticipated, the responses were quite varied, and most provided quite limited justification/explanation. However, a number of common themes have emerged from the responses, these are summarised below.

Summary of key responses

There are two main types of data that motivate many of the methodological needs identified:

Longitudinal data
Spatial data

1. Methodological needs relating to analysis of longitudinal data:

Methods for estimating change over time in social variables.

Impact of bias, missing data, measurement errors specifically on longitudinal estimates such as change, survival.

2. Methodological needs relating to analysis of spatial data:

Methods for modelling spatial data featured in 4 responses – a particular methodological problem relates to integration of multiple spatial datasets at different geographical resolutions and choice of optimum geographical resolution.

Methods for estimation of within-area *distribution* of social variables, not just area means etc.

Increasing availability of spatial data in social science requires methods for modelling spatial dependence, and a raising of awareness about the importance of using appropriate models and not ignoring spatial structure.

3. Data linkage

A third area of methodological need is stimulated by *data linkage*. One respondent identifies that there is a need for modelling techniques to get the best out of a range of separate data collections. Respondents identified various different types of data that may be linked:

- Survey and administrative datasets (including repeated linkage at intervals to 'update' variables in case where datasets are longitudinal)
- Different administrative datasets
- Qualitative and quantitative data
- Individual and area data
- Spatial point-based and area-based data

There are methodological needs for techniques to link the data and to model the data once linked. The latter need to account for biases, incompatibilities and uncertainties that arise when combining data of different types and quality.

4. Multilevel modelling

Further methodological developments in the area of *multilevel modelling* were also identified by many respondents. These methods are widely applicable for modelling both longitudinal and spatial data, and for tackling many of the modelling problems posed by linkage of multiple datasets. In particular, respondents identified a need for extensions of multilevel models to handle multiple time series, spatio-temporal data, simultaneous processes, event histories, clustered data. Methods for model checking in multilevel models was identified by one respondent. Application and further experience of the use of Bayesian multilevel modelling methods in the social sciences was noted by 3 respondents.

5. Other

Causal modelling was identified by two respondents.

Methods for modelling interactions were identified by two respondents.

Two other methodological needs were identified that we (BIAS node) also support: methods for dealing with 'zero-inflated' data, and research on how to elicit prior information from social scientists and incorporating this into appropriate models.

One respondent identifies a need for collection of longitudinal data in developing countries.

Other types of data that generate need for new methodology include web data, text analysis of public speeches/writings, social networks, collection of genetic data in NCDS cohorts.

A number of respondents identify the need for computationally efficient methods to handle large social science datasets

6. Training / awareness raising

Two respondents identified issues to do with training/communication of quantitative methods to social scientists, and a third identified a need for subject-matter journals to encourage publication of methodology, and for authors to explain novel methodology in a way that is interpretable to non-statisticians. A fourth noted that many of the methods she had identified as research needs in social science were available in other disciplines but social scientists need to be made more aware of them.

NCRM Lancaster/Warwick Report, June 2006

Research methods needs

Respondents were members of Lancaster and Warwick universities, members of the Lancaster-Warwick node and ESRC professorial fellows. Anonymity was promised to respondents and has been given.

The need for timely "methodology transfer" mechanisms and activity

Novel statistical and computer-science methodologies develop in two main ways: (i) in response to current challenges posed in other areas of science (including social science), and (ii) from "blue skies" imaginative thinking by methodologists themselves, perhaps about methods for problems which have not yet been identified or which have been thought too intractable to merit serious attention.

Both of these routes to innovation are important. An ongoing and particular difficulty for social science is that the most active areas of methodological research are often directly connected with applications in other scientific areas, such as medicine, biology, epidemiology, image analysis, machine learning, etc. If social-scientific research is to benefit fully from the most exciting methodological developments in these other areas, much more emphasis (including funding, academic recognition, etc.) is needed on work of a kind that might be called "methodology transfer", which identifies important social-scientific applications for new methods that have been developed elsewhere, which develops in detail the use of such methods to solve current social-science problems, and which makes the methods available to the wider social science research community through fully documented open-source software, through targeted review and tutorial articles, etc. A systematic approach to the stimulation and encouragement of methodology transfer activities, including activities of a more speculative character, is urgently needed if we are not to waste an enormously valuable resource (i.e., the current and recent work of most of the best computer scientists and statisticians in the world).

The need for innovation in graphical presentation of quantitative models

One bar to understanding often complex statistical models for social science data is that practitioners often have little idea as to what the parameters in a statistical model mean. Simple scatterplots superimposed with fitted lines will fail to give a valid representation of the model. Innovative use of modern technology through the internet could provide other forms of graphical output, making use of colour, interactivity, animation and dynamic techniques. There are two aims – to promote a greater understanding of what statistical analysis produces, and to provide a tool for the quantitative researcher to explore the results of various model fits. Two possibilities for implementation are to provide the tool as a web-based service, or to embed the tools in standard software such as R.

The need for better data visualisation tools for complex data.

At the other end of the spectrum, it is crucial to examine data before fitting models. Modern social surveys are complex, often involving a temporal and a spatial component. There are few

tools which allow social scientists to explore the nature of the data and which take account of these elements before embarking on sophisticated model fitting. The focus is to gain understanding of the data, both in terms of relationships between variables and spatio-temporal changes over time, as well as its faults, its missing data structure and the survey biases.

The need for greater availability of government data sets.

There are two components to this item. First, there is data which is collected, routinely used and stored by the government, and is readily available, but is not in the public domain. One example would be historical population figures and forecast population figures coming from the government Actuary's department. Such data is available only in summary form, with wide age bands and little historical information available, and not disaggregated by any other variable (region, marital status). A priority is to make such basic demographic data available to all, in a year by year form, for each age category separately. A second example would be the DVLA registration database – giving information on the ownership of types of motor vehicle, classified by region, age and gender. This could be combined with Police data collected on motor vehicle fatalities and serious accidents. The availability of such data would allow social researchers to question government assumptions about housing need, and to begin to use better measures of population at risk rather than the total population. There are many other examples.

Secondly, government surveys are often carried out but fail to be placed in the public domain. For example, the Home Office carry out a wide variety of surveys which are kept in house and not available for secondary analysis – (for example, the commercial victimisation survey, the Offending, crime and Justice survey). The ESRC and data archive, together with the Government social research unit need to work together to examine why data is failing to be placed in the public domain.

Integration of qualitative and quantitative research

In the latest issue of Theoretical Criminology (May 2006), David Gadd has produced an interesting article on the intersubjective dynamics that foster desistance from crime (that is, a focus on why and when giving up crime).
He opens his article by claiming that "Over the course of the last five years two authors have transformed the study of criminal careers from an overly technocratic and under-illuminating wing of criminology, to a broadly accessible, critically engaging, yet still policy-relevant field of study"
(p.180). The two authors he is highlighting are Shadd Maruna and Stephen Farrall. It is fascinating, though sad, how the stereotypes of the two methodological traditions are maintained - one accessible and user-friendly and the other as technocratic and under-illuminating. Until we begin to appreciate that both traditions can be made accessible and that it is the linkages between the two traditions that will produce new kinds of insights, then we will be stuck forever with two types of criminology. Bringing the two traditions together will not solve the critical tensions between different ways of interpreting data but they can be encompassed within the same goal of trying to understand criminal careers, to use this particular example.

The need for more focused international longitudinal datasets.

There are very few longitudinal panel international datasets available to the UK Social Science community, making comparisons of change across countries which take into account the longitudinal nature of the data impossible to carry out. It is essential to have longitudinal data to analyse change as individual effects can be estimated and allowed for in any analysis, The Focus of ESDS international appears to be on the provision of macro datasets rather than micro datasets. The list of surveys on their website mentions no US or German longitudinal datasets, although such surveys do exist (SOEP http://www.diw.de/english/sop/ and PSID (http://psidonline.isr.umich.edu/). Thus, it is by no means clear whether datasets in other countries exist and are not being brought to the attention of social science users, or whether few countries are collecting longitudinal data.

There is also a need for more focused surveys which cover more sociological topics _attitudes to ethnicity, immigration, gender which are common across countries. This issue of world values is becoming increasingly important, but the datasets are not there to examine these issues in depth.

The need for new statistical models in Developmental Psychology

Within developmental psychology there are obvious needs for methodological research in at least two areas concerning the interfaces between developmental science and :[1] cognitive neuroscience; [2] statistical approaches to the analysis of change.

On the first topic there are few centres in the U.K. in which there is expertise in what are coming to be standard research methods for studying the link between neural processes and cognitive functions [notably ERP with children]. There have been key shifts in the development of new technologies coinciding with theoretical change, which necessitate the expansion of this perspective as a research area in its own right as well as bringing obvious needs for training in the use of these technologies and the analyses which follow.

On the second topic there has been a growing gap between the progress in approaches to longitudinal data modelling in statistics and those used in developmental psychology. There is an urgent need to adapt the latest statistical methods to fit the designs of standard developmental psychological research designs. These are characterised by: relatively small samples; a range of tests which involve repeated trials and/or complex types of response measures. From a statistical perspective, the theoretical framework is well developed under the heading of graphical models. However, current graphical modelling software is insufficiently flexible to handle the types of response measures which arise in developmental psychology. There is an urgent need to develop a modular software environment which allows non-standard response models, graphical specifications for multivariate longitudinal responses, and exact likelihood-based inference.

NCRM MRS Node Report, June 2006

Consultation on research needs

We invited 127 people known to the Node to complete an online survey. They included people who have been involved in undertaking systematic reviews with support from ourselves and people involved in research synthesis more broadly in the field of health promotion. The questions asked were:

- What key needs for methodological research are generated by the fields of substantive social and economic research with which you are most familiar? (These may be needs that emerge from new research questions or from challenges faced within substantive social-economic research.)
- Why are these areas important? - What contribution would research in these areas make to social science research capability?
- What specific needs or opportunities for methodological research arise from new kinds of data or other research resources which are becoming available to researchers or which might become available following methodological development?
- What contribution would research in these areas make to social science research capability?
- What needs for research are there in relation to methods? (Needs might be identified from emerging developments and innovations in methods or the need to improve and better understand existing methods.)
- What contribution would research in these areas make to social science research capability?

We had 11 responses to the questionnaire: four individuals described themselves as having expertise in education; one in social policy and two in social work; one had expertise in statistics, methods and computing and two in the medical sciences. The other respondents did not describe their areas of expertise. We also discussed the issue in the Node team and included relevant responses from feedback forms collected from Node training events.

The key needs identified fell into three broad areas: methodological issues connected with 1) primary research, 2) research synthesis and a third area concerned with issues relating to specific topic areas or disciplines.

1. Primary Research

The issue which was most apparent in this area was the divide between those supporting more qualitative research, and those supporting more quantitative. They differed, in terms of the areas identified as needing further development and in the reasons given for certain issues needing to be addressed. One respondent stated that “random allocation is rarely feasible and convincing, thus there is a need for alternative research designs” whereas another expressed the view that “more RCTs would provide better evidence of effectiveness, but developing an evaluation culture in the sector is long overdue”. Another respondent emphasised the importance of addressing the interface between social and health methodologies, particularly the appropriateness of foregrounding context or accounting for it with control groups. The use of RCTs in education research in particular is hotly debated, to the extent that the argument sometimes obscures other issues and gets confused with the purpose and use of research synthesis.

Refocusing the evaluation argument away from well-rehearsed and entrenched positions and towards the appropriate use of RCTs would be a valuable, but extremely difficult, task. The importance of this was expressed by one respondent with expertise in social care: "without good local evaluation research, developing an evidence base is difficult. Without an evidence base the population of social care users are in effect being subjected to untested and possibly harmful interventions, and funders are not necessarily getting effectiveness for their money." And another respondent emphasised the importance of development in evaluation techniques from another angle, "all too often we see over simplistic "medical" interventions which do not really reflect people's experience and often have little to say about people's experience of wellness". Speaking from the perspective of a researcher who has conducted three systematic reviews in education, one respondent stated that their work "has highlighted the need for research into models and methods of evaluating educational interventions which are less dependent on case studies and on questionnaire surveys and perception data."

More generally, one respondent suggested that the confusion regarding the handling of the terms 'qualitative' and 'quantitative' might be eased by the development of alternative, more meaningful, terms. Additionally, it was felt that methods for integrating qualitative and quantitative data were worthy of additional attention. "Integrating quantitative and qualitative data gets us away from polemical and unhelpful battles and instead enables complex social problems to be addressed through the increased validity that triangulation affords."

Other issues which were raised included the need to develop research capacity in: the use of large datasets; multilevel modelling; economic evaluation; and both qualitative and quantitative evaluation. Multilevel modelling was singled out for its ability to "tease out the complex relationships between variables in 'real world' research",

Finally, developments in e-social science were not ignored. One respondent suggested that it would be useful to compare electronic versions of 'standard techniques', such as a comparison of the results of an e-Delphi process compared with face-to-face Delphi. The need to develop good methods for linking large, especially longitudinal datasets, was identified as well as using emerging GRID technology to accomplish this and to facilitate the analysis of these data. Greater use, and sophisticated analysis, of these datasets would create "new opportunities to address more complex questions across disciplines e.g. to identify the relationships between educational attainment and subsequent health, income or employment".

2. Research synthesis

As well as identifying a lack of capacity in general skills in research synthesis, the respondents identified four other areas for particular attention. Mirroring the need expressed above, respondents stated that methods for the synthesis of diverse data types and for the in-depth description of research activity need additional development. The issues of addressing the interface between social and health methodologies, and the appropriateness of foregrounding context or accounting for it with control groups was seen as pertinent to research synthesis as well as primary studies. However, it was also stated that we "need to understand more about the effects (on direction or richness of findings) of selecting different methods for conducting narrative forms of research synthesis". The synthesis of qualitative research was also singled out and one respondent suggested that systematic review techniques should be extended to encompass non-scientific data. Finally, the link that research synthesis can provide between research and policy/practice was identified – together with the need to 'reality check' research and provide decision-makers with 'practical outcomes on which to replicate research findings'.

A need for training in practical methods of research synthesis was identified. In particular, training in the development of search strategies, hands-on synthesis (especially 'mixed method) and in the use of NVivo for qualitative synthesis were identified as specific needs.

The value of research synthesis was stated by one respondent in these terms: "Systematic reviewing is essential to enable better use of the current evidence base, more quality assurance of research than peer review alone ensures and better accessibility to research for policymakers and practitioners. Furthermore, reviewing builds research capacity and improves the subsequent research design undertaken by those experiencing it." Several respondents identified a need for non-researcher stakeholders to be involved in systematic reviews: "Systematic reviews are increasingly the tool of evidence-based policy and practice, yet few of the topics for review, or the outcomes to be examined, are negotiated to be of relevance to key stakeholders, including people who use social services."

3. Issues relating to specific disciplines or topic areas

A small number of issues relating to topic areas were identified. These included:

- Sexual health of the 'generic adult population': while specific sub-populations have been well covered, the 'generic' population has not been.
- One respondent stated that 'the central issue faced by researchers I work with is that of inequalities between different social groups'.
- Compared with the large investment in social care, methods and the use of research synthesis, and economic and qualitative evaluation are underdeveloped in this field.
- A decline in research capacity with regard to quantitative techniques in education was identified, "yet access to different levels of training (such as in meta-analysis for example) is hard to find."

NCRM QUALITI Node (Cardiff) Report, June 2006

Consultation: Research Needs Analysis

Introduction

This report summarises the results of a consultation exercise run with the QUALITI project team, including its researchers, executive group and demonstrator project directors. Consultation questionnaire were also sent to QUALITI Associate Members. We received only one submission from outside the QUALITI project team. Following the collection of responses to the consultation survey we held a meeting to discuss the proposals. That discussion forms the basis of this report to the Hub. By virtue of the Node's emphasis on the development of qualitative research methods this report has focused on research needs in this area. We recognise, however, that these needs must be addressed within the broader social science context.

General comments

QUALITI wishes to make three general comments before presenting the specific needs that were identified during our consultation.

Firstly, it was noted that whilst the ESRC Strategic Plan provides an obvious place from which to develop a research needs agenda for the social science research community this should not proceed uncritically. Although starting from the ESRC document would ensure commensurability with the ESRC's proposed direction it was noted that the Plan presupposes a particular approach to research methods and methodologies, primarily around the use of large-scale datasets. This raises particular challenges to qualitative research, which some of the suggestions listed below respond to. In particular, it was felt that more recognition was needed of the way in which research strategies need to anticipate the collection, building, exploitation, mining and combining of large-scale *qualitative* datasets, and not over-emphasise the use of more numerically-stored and -analysed datasets. More generally, there was also a concern that a consultation exercise like this should be able to go beyond the parameters of current thinking within the ESRC.

The second general point about future needs for researching qualitative research methods is that many existing qualitative research methods may need further research and investigation given the technological advancements that may impact upon their practice. In particular, we wish to argue that the routine collection, storage, mining and analysis of qualitative data may require detailed scrutiny as new technologies (both hardware and software) are employed in the research process. We would argue that this scrutiny of research methods is not always undertaken, and certainly not in the context of being the primary research objective.

The final general point we would wish to make relates to the distinction between research needs analysis and training needs analysis. QUALITI has argued elsewhere that the innovative development of new research methods should not and can not be separated from the need for their dissemination, consumption and ultimate acquisition in its expertise by other social science researchers. The development and innovation of any given method should ultimately be judged on its contribution to the professional research community and not on the sole adoption of the method among small interest groups.

Specific Research Needs

Generalisability of geographically local research

The importance and significance of qualitative community-based research has already been established within the social science community. However, we believe that the potential for such localised research has never been fully realised because of the disagreements within this core community about the nature of generalisation and representation within such qualitatively-oriented research. For example, is it legitimate, and if so on what basis, to translate and transfer research findings based on qualitative research from one locale to another. The complexities of qualitative research in this context stand in sharp contrast to the 'rules' of generalisation employed in quantitative studies that, although also contested, appear comparatively straightforward to understand and follow.

By researching this methodological challenge it would be possible for qualitative research to make a significantly greater contribution to both geographical and longitudinal analyses of space, place, community and poverty. In this way the high quality qualitative research that is conducted within the UK might be better able to contribute to the current attempts by policy-makers to address socio-economic and related disadvantage in British society, particularly in relation to issues such as regeneration (health, welfare, education), citizenship-participation, social exclusion/inclusion, inter/intra communal relations, migration and integration, multi-culturalism and identity-formation. In addition to addressing these important policy concerns, addressing the methodological challenge of generalising geographically local research would also have a wider impact on the use and interpretation of qualitative research in other contexts.

We think that how, and to what extent, qualitative research can be made to generalise is, itself, an empirical question and would suggest that it be investigate through a relatively large-scale qualitative-based study that would investigate one or more themes across a large number and variety of localities. Few, if any, studies of this kind have been conducted on the scale needed to generate the amount of data required to test the generalisability of findings. Moreover, even where large scale data sets have been assembled, the generalisation of qualitative findings was not one the main research objectives of the study.

The ESRC would seem to be the appropriate funding body to support this for a number of reasons: the substantive interest in and importance of geographically local research in contributing to a better understanding of British society; the collection and analysis of large-scale (qualitative) datasets; and the major methodological contribution that this research could make to the social science research community.

New forms of social interaction

Social interactions are increasingly being conducted through, and mediated by, new technologies that are changing the ways in which communities are created and sustained. Popular culture is full of examples of new ways of networking but similar changes may also be taking place in the other areas where qualitative research has made important contributions to social science research. One example of this trend, and the challenge it poses for traditional qualitative research methods, is the field of science, technology and innovation studies (STIS), which is concerned with the creation and development of scientific knowledge. In traditional STS fieldwork, ethnographic and other qualitative methods were used to follow the scientists through their networks, but what happens to these methods when scientists exploit new technologies to communicate via email, on-line pre-print archives, Skype and video-

conferences. Furthermore, the use of GRID technologies to aide interaction is generating new and extensive datasets that are worthy of exploitation for research purposes.

Clearly, much of this social interaction remains qualitative in nature, yet the developments in research methods and methodologies that are needed to apply existing methods in these new contexts or on these new data sets are largely ad hoc and untested. Areas of concern include how to participate in networks where even participants are not themselves co-present and how to create, manage and index the large volumes of data that may be generated by emails, instant messaging, online discussion boards and so on. In general developing and investigating methods to address these needs would be important in improving our understanding of these new forms of social interaction. In the context of science studies, for example, it would help social scientists to understand how knowledge claims are circulated and judged by others, what new technologies facilitate and, just as crucially, what aspects of scientific work continue to rely on more traditional forms of face-to-face interaction and socialisation.

This is clearly a growing and emergent area of substantive interest for social science researchers and the ESRC is ideally placed to support research that not only investigates these new forms of social interaction but that also examines the methodological implications for collecting, storing, mining and analysing this 'new' data.

Online qualitative research

As outlined above new modes of social interaction are now possible due to technological change. For social science researchers this raises new opportunities in conducting all kinds of social research. In particular there is growing interest in using the internet and related technologies to conduct qualitative research with participants. Using the internet has enormous potential and creates new possibilities for accessing emergent (virtual) communities as well as disparate or otherwise inaccessible individuals.

To date traditional qualitative research methods, such as ethnographic methods, interviews and focus groups have been adapted and utilised in various on-line contexts. It is important to reflect critically on these innovations, however, and examine the extent to which traditional qualitative methods, which draw heavily on on face-to-face observation or engagement, can in fact be replicated in virtual forms of communication? For example, do the online methods employed capture the same quality of data as face-to-face methods? How is the data and research compromised (or at least changed) by the decision to undertake the research via the internet?

There is a considerable, and arguably urgent, need to investigate these questions by undertaking comparative studies of ethnographies, interviews and focus groups via the internet with more traditional face-to-face investigations. This research would address two related concerns. Firstly, it would enable questions about the quality of data collected and the methods by which such data should be analysed to be investigated empirically. Secondly, it could also inform a more wide ranging discussion of more general issues, such as sampling and research ethics in this new context. A review of research and methods in this area would also be able to distinguish between the effects of using real-time interactions with semi-archived and delayed social interactions.

Simulation and qualitative research

Again, due to a number of technological advancements in hardware and software it is now possible to undertake qualitative research using simulations. These could be based on, for example, new datasets generated from Global Positioning Systems and re-presented in Geographical Information Systems. Alternatively the simulations could be generated from new gaming software such as Sim City – a further advancement in the use of photographs, drawings, maps and films in qualitative research. These new technologies allow for the creation of a new range of social prompts based on dynamic and modifiable visual images that could be employed in (traditional) qualitative research to provide richer understandings of attitudes, emotions and beliefs. This would have particular relevance to research to 'futures', but it would also be of considerable value to policy-relevant research where alternative futures are still possible, such as in sustainability, climate change, and planning.

The methodological implications of using these new forms of simulation are unknown. Research is needed to investigate how these simulations can be employed in traditional qualitative research, what methodological advancements or innovations would be required in order to realise their potential, and to begin to understand how these simulations are interpreted and understood.

Professional development of social science researchers

As discussed in the introduction the success of any proposed development is in the dissemination, consumption and utilisation of these new methods, tools and approaches by other social science researchers. However, very little is known about the way social science researchers learn and develop their methodological expertise. Without this understanding any attempt to build research capacity amongst the social science academic community will be limited.

Research into this substantive area may not be based on 'new' data or 'new' methods but it does seem central to understanding how social science researchers respond to 'new' data or 'new' methods. A study of this kind could also follow the development of research into innovative methods in order to identify how new social science knowledge is circulated and judged. For example, such research could consider the apparent resistance to developing quantitative research skills and expertise among many social science researchers, how research across disciplines is undertaken, and thus make a direct contribution to important efforts to promote interdisciplinary research in which researchers need both to retain and use their own expertise whilst also coming to appreciate the expertise of others too. Understanding how differences of view are negotiated and resolved is thus central to understanding how interdisciplinarity is accomplished and research that examines how and when social science researchers should acquire the different kinds of expertise needed to work across disciplines is therefore needed. In the context of research methods, the same issues arise in the infamous qualitative-quantitative divide, in which social science must find more productive ways to manage the tension between the strong (but specialised) expertise in specific research methods and weak (but broad expertise) of research methods in general.

NCRM Real Life Methods Node Report, June 2006

ESRC NCRM Methodological Research Needs Assessment

We approached a range of individuals and email lists/organisations, as we had indicated in our plans. We invited their views, and included the NCRM questionnaire if they wished to use this, or suggested that alternatively they could simply send us their comments. We also sent out an invitation to respond to the NCRM Hub's call for comments via the questionnaire on the NCRM website.

Those we contacted included:
Our own Node members and associates
Qualitative Longitudinal Email List, national email list
Leeds Social Sciences Institute Members (LSSI)
Families, Life Course and Generations Research Group Members, University of Leeds
Morgan Centre Members, University of Manchester
Visual Sociology Association
Individuals:
Fiona Williams, Leeds
Nick Crossley, Manchester
Mike Savage, Manchester
Fiona Devine, Manchester
Andy Turner, Leeds
Anna Madill, Leeds

We received only a limited set of responses from outside our own Node unfortunately. We hope that some of those who did not respond to us directly would have used the questionnaire on the NCRM website to feed their views into the consultation.

Our response is thus derived primarily from our own Node membership and associates, some members of the Morgan Centre at Manchester, and some members of the QL list.

Some people's responses identified training needs. We have not included these as that was not the purpose of this consultation, and NCRM has already conducted a systematic analysis of training needs.

Research Needs

We are putting forward three core ideas, each of which we think is a priority area for methodological research. These ideas have two characteristics in common. First, they all propose that methodological research needs to take place in relation to substantive questions and concerns, rather than in the abstract where techniques may be proliferated, but where there is no clear anchoring of them in social science concerns. We do not attempt to prescribe what these substantive contexts should be, since our list would probably inevitably reflect our own interests and expertise, and ESRC and NCRM need to work from a broader canvas. Secondly, they all involve an element of risk, and this especially applies to ideas 1 and 2. We see risk as absolutely integral to advancement and innovation in methodology/substance, and actually in the long run the greater risk for social science is not to take any.

1. Methodologies for extending the boundaries of social science knowledge

This would involve a programme which sought to target areas where social science knowledge and capacity for understanding and explanation are limited by our methods/ologies, and specifically by our lack of ease in combining them or drawing productively on a dialogue between them. In particular, the programme would need to be aimed at and start from those substantive places where our research questions are not as far reaching as they should or might be, and where our answers are partial because they draw on a limited range of methods or types of data. Such a programme would need to engage experts/leading edge social scientists who have expertise in different methodologies and in substantive research domains or disciplines. They would get involved in collaborative ventures, dialogues and research programmes around substantive themes that engage them, that are important, and where a lack of working across methodological boundaries is limiting what social science can offer. These programmes would need to confront philosophical, epistemological and practical issues in combining or linking methods and analyses across a broad spectrum, but the programme would not be designed to advance or promote a mixed methods agenda specifically nor for its own sake, so much as to extend both the boundaries and the incisiveness of substantive social science knowledge.

Such a programme might involve a combination of funded projects or networks explicitly designed to engage leading edge researchers/teams in identifying and dealing with existing inadequacies in social science knowledge. The incentive would need to be great enough to encourage such leading researchers to engage with others in forward looking and innovative ways that will inevitably feel less comfortable and more risky than staying within and indeed advancing their own methodological territory. A programme of high profile seminars or conferences themed to fit with the projects would help draw other leading teams as well as newer researchers into the dialogue around specific issues and questions, and perhaps support for some small scale projects would be a useful supplement so that the issues were being tackled from all levels, so to speak.

Although a fair amount of (often pragmatic) mixed methods research currently takes place, and is funded by not only ESRC but others (e.g. in health research), this proposal would require a scale of funding and a mode and quality of intellectual engagement, collaboration, dialogue and endeavour that makes ESRC the ideal, indeed probably the only realistic funder.

2. Methodologies for researching emotional and sensory life

Social science methodologies have tended to focus our attention on reported behaviours, attitudes and opinions, macro processes and social practices. Some have commented that this can result in rather sterile analyses that lack real life resonance. The analysis of emotional life has been a minority interest, and has tended to be compartmentalised within certain disciplines, particularly for example psychoanalytic approaches in psychology, which have almost by default assumed a pre-eminence in this field. Similarly, the sensory and kinaesthetic dimensions of life have not been a major social science theme, and their analysis tends to be partial and to be confined within certain branches of social anthropology, or again, psychology. Furthermore, sensory, kinaesthetic or emotional matters are sometimes even seen as clinical concerns that are entirely outside of a social science remit, yet there are important social science questions that we need to be asking about these domains. Social science methodologies in these areas, with the exception of these specialist pockets, are uncertain and highly

underdeveloped. There is a pressing need for the development of more confident (tried and tested), creative and less specialist or doctrinal approaches to these core dimensions of social and personal life. This argument extends into a need for methods which can fully engage with unspoken elements of social life, and with people who do not have full access to language for example. Social science research frequently excludes people who are unable to communicate verbally or in writing, or even to converse in English, resulting in a long-standing systematic bias.

ESRC is in the best position to support research on these important methodological questions and concerns, precisely because its style of funding and capacity building concerns would mean that these issues would not simply be put back into minority interest pockets within certain disciplines. ESRC's interest in methodological development would allow for the consideration of conceptual issues, methodologies, methods and analytical techniques – all in combination – which would be vital for the required a step change or paradigm shift in this area. In devising a programme, care would need to be taken to ensure that the result was indeed to expand our ways of exploring these dimensions, rather than simply to reinforce only existing approaches.

3. Visual methodologies

More and more social scientists are recognising the value of visual methodologies and methodological techniques, but many struggle with some of the epistemological and practical issues involved in combining the visual with text and numbers, in developing participatory visual methods and, crucially, in connecting innovative, exciting and appealing visual techniques with the intellectual rigour of social science research questions, explanations, arguments and generalisations. Similarly, the whole domain of visual ethics and visual data management is very uncertain, and needs careful development in the context of grounded empirical and substantive research (rather than in the abstract), and the engagement of experienced research practitioners.

It is well known that there are training needs in visual methods, but there are also methodological research needs, because these approaches (despite being around for a long time in some disciplines) are still in their infancy in social science, and their development has been uneven. It is clear that visual methods have a vital role in social science representations, but we need to develop much better understandings of the place of and potential for visual methods (in combination with other forms of data and approach) in research design, and in social science explanations, argument and evidence.