MethodsNews

Newsletter from the ESRC National Centre for Research Methods

Research Methods Festival 2018

Rosalind Edwards, NCRM, University of Southampton

If you are interested in how we can best investigate and understand the world through social research, then the 8th ESRC Research Methods Festival provides a great opportunity for you to explore new and innovative methods, as well as get to grips with key developments in more established ways of collecting and analysing data. Every two years the National Centre for Research Methods (NCRM) organises this three-day event, full of seminars, activities and lively discussions about established and emerging methods used in social science research. The 2018 Festival returns to the University of Bath, located in a beautiful historic city, from 3rd to 5th July.

Participants from academia, government, charitable and private sectors are attracted to the Festival. Established and early career researchers have the opportunity to hear from speakers addressing a wide range of interesting methodological themes. Key themes for this year are: methodological innovation; crossing methodological boundaries; analysis of complex data sets; pedagogy of methods; and careers and skills development.

The methodological innovation theme tackles a range of cutting edge methodological developments, including advanced analytics at the Bank of England, comics as research method, a multi-modal diary app, digital sensors, and an ethnographic somatics toolkit, while the crossing methodological boundaries theme looks at the challenges in combining different paradigms such as social science and molecular genetic research, and participatory theatre and social research.

Sessi...
New methods and advanced analytics at the Bank of England

David Bholat, James Brookes, Chiranjit Chakraborty, Andreas Joseph, Alice Owen, Eryk Walczak,
Bank of England

There has been a proliferation in the amount of data generated in recent years, from large regulatory datasets available to supervisors to text created via social media. Many of these newer sources of data have properties, such as high dimensionality, which require analytical methods different from the standard econometrics toolkit. Fortunately, as new data sources have come on the scene, new techniques have also. For example, machine learning or natural language processing.

In 2014, the Bank of England established the Advanced Analytics (AA) division to tap into these novel data sources and use state-of-the-art techniques. Here we preview a few cases where we have used new methods and advanced analytics, as a taster of our panel session at the ESRC Research Methods Festival.

Machine learning (ML) is a set of approaches to model complex relations within data, often becoming better as the quantity of available data increases. These often come with fewer assumptions regarding the data, such as distributional properties, e.g. normality, which traditional techniques require. In a recent paper we review the most common models and demonstrate how they can be applied by central banks. In one of our case studies, we assess the relative performance of different predictive models in forecasting consumer price inflation, which is a central task with respect to the Bank of England’s objective of maintaining price stability. We used a simple lead-lag approach to predict changes in inflation using a set of explanatory macroeconomic variables such as the unemployment rate, Bank rate, and changes in monetary aggregates, among others. One of the best performing models was the support vector machine (SVM). The idea behind SVMs is to find a subset of observations, the support vectors, which can be used to describe the target variable, in this case, inflation. Often a mathematical trick is applied to identify the support vectors within a transformed space. This clever approach makes the model highly flexible but also sparse in this small-data example, explaining its good performance.

However, ML is no panacea and some of the limitations relate to modelling in general, some specifically to ML models. The forecasting performance of the SVM, like that of all models, dropped significantly after the global financial crisis of 2008-09 (GFC). This can be explained by the crisis producing patterns in the data which models had not seen before, and therefore could not learn. This also relates to the black-box nature of ML models, where it is harder to understand the relation between inputs and output than, for example, with standard linear models.

In another paper, we have used Natural language processing (NLP) techniques to analyse letters sent by the Bank of England’s Prudential Regulation Authority (PRA) to the banks and building societies it supervises. Our aim was to understand how the PRA varies its writing style depending on who the letters are sent to. We identified the distinguishing textual indicators using a ML algorithm called random forests, which deals effectively with high-dimensional data. Our results indicated that riskier firms typically receive letters that are overall more linguistically complex and more negative in sentiment.

ML is not the only class of methods that is well-suited but relatively new to central bank policy analysis. In the wake of the GFC, large regulatory data sources became available particularly from previously opaque financial markets. A pilot project investigated the bilateral network structure of a subset of the foreign exchange derivatives markets, some of the largest markets ever created as measured by nominal values of transactions. We find that these markets have a highly concentrated, multi-layered network structure. Investigating an external shock in the euro Swiss franc market, we examine its impact on the granular structure and overall connectivity of the market.

Another domain of growing importance in economic studies is computational analysis. Particularly, computational agent-based models (ABMs) are growing in popularity. ABMs are often based on simple behavioural rules guiding the interaction of individual agents and typically require fewer assumptions about aggregation or reversion to equilibrium than traditional macro models. They often suggest that simple micro behaviour can lead to unexpectedly complex macro outcomes. In another recent paper, we built a heterogeneous agent-based model of the corporate bond market, calibrated against US data. This allowed us to gauge the impact of different bond trading strategies on liquidity and yield and to assess conditions under which large yield dislocations are relatively likely.

All in all, we hope we could give a flavour of how modern data analytics can help a policy institution such as the Bank of England to better gauge the economy and to take appropriate policy decisions.

References and notes
1 https://www.ncrm.ac.uk/RMF2018/home.php
3 The data and code are available on GitHub. https://github.com/andi-jo/ML_projection_toolbox
Comics as a research method

Lydia Wysocki and Jorge Catala-Carrasco, Newcastle University

Comics can appear in print and digital formats as newspaper cartoon, comic strip, a story of one or more pages within a magazine, comic book, graphic novel, fanzine and webcomic. Comics' broad range of genres, which span from editorial opinion, graphic essays, autobiography, social realism, pedagogical comics or countercultural, present vast possibilities for use as research methods. All these forms and genres are examples of the same comics medium. Moreover, the multimodality and expressive possibilities in page and panel composition make comics a suitable method for the analysis of processes of cognition and memory acquisition as this is a medium built on the expressive multiplicity of fragments and the synchronicity of possible times.

Our focus goes beyond examples in creative practice and journalism to focus on how comics help the communication of research. There is joy in the freedom to make your own comics and share them with different audiences beyond paywalled academic publishing. You can make and photocopy a comic yourself, as a low-risk low-cost endeavour. You can explore other art, writing, and printing possibilities in collaboration with experienced comics artists and writers, and distribute the finished comics however you see fit. Opportunities for general audience print distribution include libraries, comics conventions, comics shops, and special events, or you might prioritise targeted distribution through specific schools, charities and NGOs, or other groups.

Online distribution goes further. Uploading PDF or image files of your comic to your own website and social media or building an audience through webcomics platforms can share that same comic with different audiences. But it would be a mistake to see digital and online environments only as distribution channels: they offer new ways to use comics. Consider the use of scrolling and hyperlinks to offer different paths through a story1, or use of GIFs to introduce movement2. These are used by comics creators for innovation in storytelling, but the possibilities for research are only starting to be explored. See, for example, Gertrude Bell: Archaeologist, Writer, Explorer3 using hyperlinks to connect narrative comics with digitised artefacts.

For an assessment of what an effective comic is we need to consider formal elements of the text itself (author(s), script, drawing technique, style, composition, colour) as well as the paratext, the material that surrounds the comic forming a frame to the main text (front cover, binding, back matter). These components play a role in the main goal of a comic: communicating a message successfully to an active reader. Readers complete this act of communication with their active participation in the reading process. We step back from assessments of what a good or bad comic is because it puts too much weight on aesthetics and narration. While important, there are other facets to consider. For example, comics within the Graphic Medicine movement drawn by patients, clinicians or children to reflect traumatic experiences may use an unrefined drawing technique or the script might be simple, but the reader may consider the comic successful in communicating an experience in an authentic, moving way.

With all that comics offer, why limit this to the dissemination of finished research? There are opportunities to use comics throughout the research process, from planning to doing to disseminating. The FaSMEd Comics project was part of a larger European consortium project using formative assessment and technology in new-style maths and science lessons4. Our team (including Lydia Wysocki, Lucy Tiplady, Jill Clark, and Ulrike Thomas) ran a lunchtime comics club with schoolchildren aged 11-12, making their own comics to reflect on their own experiences of the project. After introductory activities on the sequencing of events, and how words and pictures can work together, we discussed what it was about those lessons that should feature in the comics. Each child made a rough version of their comic in pencil then final artwork in ink. We then used the comics as a prompt when interviewing the children about their experiences: what had they drawn, and why had they drawn it as they did? Only then did the comic move to being used in project dissemination to tell the wider project team, and people beyond the project, about pupils' experiences told in their own words and pictures. The same comic was used as part of elicitation, interviewing, and dissemination, as both a process within and as an output of research.

Other work includes: Sarah McNicol’s participatory project ‘Graphic Lives: telling Bangladeshi migrant women’s stories through graphic narratives5, Chris Bailey on the use of comics to transcribe video data2, and the collaboration with the visiting artist Javier de Isusi, engaging with local NGOs in Newcastle6. We look forward to continuing discussions in our session at NCRM Festival 2018.

References

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9 https://www.ncrm.ac.uk/RMF2018/home.php
A ‘mapping tool’ for researching space and place

Michael Donnelly, Sol Gamsu and Sam Whewall, University of Bath

Space and place are increasingly on the research agenda right across the social sciences – creating enormous challenges for researchers – not least given the huge theoretical debate about what constitutes the spatial and its highly elusive nature. For the past year and a half, we have been carrying out research to understand the spatial imaginaries of young people on the cusp of progressing to university – harnessing their orientations to space and place using a new mapping method we developed.

This research is part of a 3-year study into the geographies of higher education, funded by the Economic and Social Research Council (ESRC) (award no. ES/N02121/1) – which has involved over 180 young people across 20 fieldwork sites from all four corners of the UK. The mapping method developed through the programme of research provides an ideal tool for use in researching a wide range of other social phenomena.

Half a century ago, Gould and White presented their new cognitive mapping method, one of the early methodological developments in this area. Cognitive mapping methods since then have been developed and used in myriad ways across academic disciplines. In building on this work, and crafting our own methodological contribution to researching space and place, we had four guiding principles in mind:

1. Foregrounding geography. We aimed to elicit perceptions, feelings and orientations that were explicitly geographic and concerned places participants inhabited as well as their sense of the ‘other’ in geographic terms.

2. A weak framing of space and place. Where conventional maps, ideologically and artificially carved up with borders and/or formatted according to particular structures, are used, participants’ imagined geographies are strongly framed for them. In foregrounding geography, we intended to loosely frame the research instrument in order to allow for the widest range of possible imaginaries to be elicited.

3. Capturing subjective vantage points. A key challenge is to capture the specificity of place; the multiple and unique perceptions of what constitutes a place; and how places are both spatially and socially connected/disconnected and proximal/distant in the minds of individuals.

4. A relational geography. Our method seeks to explore young people’s broader geographical imaginary. This allows for the relationality of place to be captured – how, for the individual, meaning is attached to place through its relation to another place.

The method we created involves participants completing a ‘mapping exercise’ prior to an individual interview. For our own project, we were interested in the UK, and so the mapping method only presented a map spanning the UK territory – however, the method could be adapted to capture a wider or smaller geographic area – to suit the particular research project. The mapping tool contains other relevant information on the research project as well as instructions on what to do. In completing the mapping exercise, the participant is asked to colour-code their printed map according to the following key: green = ‘places where you would prefer to live [in our case, for university]’; red: ‘places where you definitely do not see yourself living [for university]’; orange: ‘places where you would not mind or are indifferent about living for university’; blue: ‘places you do not know or haven’t really thought about.’ The map provided omits place names and county/national borders, so that participants’ geographical perceptions are not framed for them; rather, they are permitted to show the researcher their subjective geographic imaginaries. In using the method, this sometimes resulted in participants inaccurately labelling places. Whilst some could see this as a drawback, in many ways, any geographic inaccuracies are important and insightful data in themselves.

The follow-on interview provides an opportunity for participants to narrate the construction of their map to the interviewer. In our research, this began with participants being asked ‘tell us about your map and how you came to use the different colours’ – which generated a very detailed and thick description of young people’s geographic imaginaries – feelings and perceptions about different places in the UK, stories they had heard about places, experiences of being in different places etc. Underlying their narratives was a highly subjective conceptualisation of space and place – to some young people, cities, towns and villages figured heavily, whilst others conceptualised it in a broader sense of broader regions or countries within the UK. What is clear from developing and using this method is the advantages it bring to the research process. In a forthcoming journal article, we outline what we believe are its five key affordances in eliciting the spatial imaginaries of research participants. The mapping tool provides a further alternative to the standalone interview in researching spatial phenomena across the social sciences.

References
It can pay to ask a simple ‘what is’ question

Graham Crow, NCRM, University of Edinburgh

People look to NCRM to provide answers to all sorts of questions about research methods. These questions may be quite complex, but they do not have to be. Among the more popular of resources from NCRM are materials designed to provide introductions to particular research methods (or methodological issues) to an audience who are assumed to be interested but not necessarily to have any prior knowledge. It was clear in the early days of NCRM that there would be a demand for us to supply concise and accessible overviews of a range of frequently-used research methods and of current issues in research methodology.

One way of meeting this demand has been to run presentations at the ESRC Research Methods Festivals dedicated to answering questions that range from ‘what is action research?’ (Danny Burns), ‘what is biosocial research?’ (Michaela Benzeval) and ‘what is CAQDAS?’ (Ann Lewins and Chris Silver) to ‘what is survey weighting?’ (Chris Skinner), ‘what are visual methods?’ (John Prosser and Andrew Clark) and ‘what is webometrics?’ (Mike Thelwall). There are now dozens of these presentations captured on video that are available on the NCRM website1 and six more presentations will be made at the 2018 Research Methods Festival in July2. It is an indication of the large number of methods to be found in the modern social scientist’s toolbox that the topics on the programme have not yet been covered. The Tuesday afternoon presentations will be on data linkage (Peter Smith), citizens’ juries (Andrew Thompson) and mixed methods research (Donna Mertens), while on the Wednesday afternoon the presentation topics are worldmapper (Danny Dorling), methodological pluralism (Graham Crow) and data quality (Olga Maslovskaya). These twenty-minute presentations cannot hope to be exhaustive of their topic, of course, but the format does allow for enough information about a method’s key features and examples of its application to be provided and thereby to allow someone unfamiliar with it to decide whether this is something that they would benefit from pursuing further.

For those people that do decide to extend their knowledge of a method or methodological issue, NCRM is also associated with a series of books, published by Bloomsbury Academic. Books in the What is? research methods series3 are written by experts in their fields with a brief to write about their subject for a broad audience. They are designed to allow readers to acquire a greater depth of knowledge of the method than can be conveyed in a short video, but at 35,000 words their authors remain mindful of the value of conciseness. 2018 has seen two new titles in the series published on Community Studies (by Graham Crow) and Qualitative Longitudinal Data Analysis (by Vernon Gayle and Paul Lambert). These follow contributions to the series on Diary Method (Ruth Bartlett and Christine Milligan, 2015), Discourse Analysis (Stephanie Taylor, 2013), Inclusive Research (Melanie Nind, 2014), Narrative Analysis (Corinne Squire et al., 2014), Online Research (Tristram Hooley et al., 2012), Qualitative Interviewing (Ros Edwards and Janet Holland, 2013), Qualitative Research Ethics (Rose Wiles, 2012) and Social Network Analysis (John Scott, 2012). Two more titles, on Qualitative Longitudinal Research (Bren Neale) and Rhythmanalysis (Dawn Lyon) are due out later in 2018, and further titles are at various stages of preparation. Anyone interested in writing for the series is welcome to contact me as series editor at gcrow@exseed.ed.ac.uk for more information.

The ‘What is?’ format of presentations and books allows researchers who are new to a method to gain an insight into its key features and critical debates about its use, but we have found that they also provide a useful update on recent developments for people who have had some prior acquaintance with it at earlier stages in their careers. Methodological innovation is the order of the day, and in some fields this is proceeding so quickly that it feels very hard to keep up with advances even in one’s area of specialism, let alone more general developments. Over the years I have found that it is by no means only novice researchers who seek answers to the ‘what is?’ question. It can also be colleagues with a wealth of experience in one area whose collaboration on a new mixed methods project requires them to broaden their methodological repertoire, or research methods trainers who frequently find themselves asked by students what are the latest developments with which they should be keeping up. A further group of users of the ‘what is?’ resources are people whose old-fashioned curiosity leads them to engage with an approach that they know to be a long way from their comfort zone, driven by the recognition that serendipitous connections have played a part in many a scientific advance (as Robert Merton famously showed). For all of these reasons, and perhaps others besides, it can pay to ask the simple ‘what is?’ question.

References
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3 https://www.bloomsbury.com/uk/series/the-what-is-research-methods-series/
Get what you need from your CAQDAS program with the Five-Level QDA method

Christina Silver, CAQDAS Networking Project, University of Surrey

Since the mid-1980s numerous software packages have been available to facilitate the analysis of qualitative data (see the CAQDAS Networking Project for reviews1). Many researchers have successfully adopted these technologies but new users often experience challenges. Nick Woolf and I have reflected long and hard on how to teach these packages so that researchers can harness their power without needing a lengthy process of trial and error. The result is the Five-Level QDA (R) method – a CAQDAS pedagogy that we developed to span methodologies, software programs and teaching modes2,3. It unpacks experts’ unconscious processes so that new users can quickly develop the expertise they need for their varied and idiosyncratic analyses.

The key principle is to clearly separate strategies from tactics. Strategies are what you plan to do to answer your research question, and tactics are how you plan to do it – which could be using manual methods, general-purpose software such as MS Word or Excel or dedicated CAQDAS programs. Qualitative analytic strategies are to varying degrees iterative and emergent, whereas computer software is predetermined and step-by-step. This contradiction leaves beginning researchers struggling to harness software for specific analytic purposes. There are different ways to manage the contradiction. Avoiding it can lead to giving up the software right when it could be most helpful. Compromising muddies the distinction between strategies and tactics, resulting in the features of the software driving the analytic process. Neither leads to powerful use. However the contradiction can be transcended through a process of translating between strategies and tactics.

The translation process is effected in a step-by-step. This contradiction leaves many of our students prefer to continue to follow the steps of translation as a helpful way to manage, document, and communicate a qualitative analysis.

Find out more at the ESRC Research Methods Festival4. Our session at the Methods Festival discusses the development and application of the Five-Level QDA method using examples from different research contexts in three leading CAQDAS packages (ATLAS.ti, MAXQDA and NVivo). The session, chaired by Sarah Bulloch of the CAQDAS Networking Project is in three parts:

First, I outline the genesis, principles and application of the method, describing a) why developing such a CAQDAS pedagogy was necessary, b) the principles of the method, and c) the core skill of translation.

Second, Steve Wright, an experienced user and teacher of ATLAS.ti and NVivo, discusses his experiences of integrating the Five-Level QDA method into his teaching practice. He discusses a) the extent to which the principles of the method resonate with his existing practices, b) the adaptability of the method in the context of different modes of teaching, and c) the challenges involved in adopting the method.

Third, Jacqueline Priego, an experienced user and teacher of MAXQDA, illustrates an example of applying the Five-Level QDA method in a real-world qualitative analysis. This involves demonstrating the translation of a specific analytic task into software tools using the five steps of translation and our Analytic Planning Worksheets to illustrate how the analytic task could be accomplished in different ways using the software.

For more information see www.fivelvelqda.com

References

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4 www.ncrm.ac.uk/RMF2018/home.php
Do participatory visual methods ‘give voice’?

Daniel McCulloch, NCRM, Open University

Participatory visual methods are those in which research participants are active in shaping the project as co-producers of visual knowledge. They can be traced back to two main sorts of approaches: use of visual data as stimulus in research (for example photo-elocation) and visual data as the product of research (e.g. visual ethnography).

These have become a popular research and social activism tool across various disciplines, with many researchers employing them to increase the presence of the ‘voices’ of participants in research, particularly where so-called marginalised groups are said to have had their ‘voices’ silenced in mainstream cultural and political decision-making processes.

Although there is no universal conceptualisation of ‘voice’, it can be understood as both:

- a process (of giving an account of one’s life and the world in which we act); and
- a value – through giving weight to ways of structuring society that allow for voice as a process, and particularly ‘voice that matters’.

The notion of ‘voice that matters’ refers to both expressing one’s own voice, and to the right to be heard by others, and as such, can be understood to be linked to the idea of ‘listening’.

Commentators on participatory visual methods have highlighted the need for critical assessment of the relationship between participatory visual methods and voice due to the influences at play throughout the process. These influences include:

- ‘intrusive presences’ such as close relatives and friends of participants during data production;
- the impact of researcher authority, particularly where voices do not fit the researcher’s desired narrative; and
- ways in which cultural, social, and political norms and values can influence participant voices.

Questions also persist around whether voice is ‘given’, ‘negotiated’, ‘constructed’, ‘co-created’, or a combination of these and others.

Such questions concern our understandings of ‘voice’, our views on the relationship between researchers and participants, and our judgements of the methodological capabilities of participatory visual methods.

But how do we know whether these methods actually ‘give voice’ to participants? The project entitled Do participatory visual methods give voice? is exploring the evidence. Such evidence will be important for both academic researchers, and for advocacy groups and practitioners who make use of these methods in their work.

To assess of the relationship between participatory visual methods and voice, the project includes researcher understandings of this relationship, participant assessments of participatory visual methods, and audience understandings of visual outputs.

The project was funded by NCRM in September 2017 and runs until the end of February 2019. So far, the project team have engaged in a review of the literature, as well as carrying out two workshops with experienced researchers. In addition to highlighting different conceptualisations of voice, preliminary findings show variations in what researchers count as participation.

Furthermore, questions remain about whether methods are ever participatory in and of themselves, or whether these are part of a wider participatory approach to research. Workshops with researchers have shown an appetite for ongoing discussion, so an online forum is being established to facilitate this. Anyone wishing to join the conversation should get in contact using any of the means at the end of this article.

In the coming months the project team will facilitate participatory visual research with a so-called marginalised community about their experiences of living in a stigmatised area associated with poverty. Participant feedback will assess both the methods and the voice offered through them – prior to, during, and after data generation. The team will also ask audiences about their understandings of the participant voices evident within visual outputs.

Initial findings from the early part of the project will be presented at the British Sociological Association (BSA) conference in April 2018, and further findings from the project will be presented at the ESRC Research Methods Festival in July 2018.

Website: http://methods-and-voice.org

Twitter: @methodsandvoice

Instagram: methodsandvoice

Email: daniel.mcculloch@open.ac.uk

References

8 https://www.ncrm.ac.uk/RMF2018/home.php
NCRM training and events


Using Sensors in Social Research, 4 - 5 April 2018, Surrey

Introduction to Programming Workshop, 9 – 10 April 2018, London

Duplication and Replication in QM training, 18 April 2018, Edinburgh

How to Bring Together Multiple Qualitative Datasets: Expanding your Analytic Comfort Zone, 2 May 2018, Edinburgh

Interpretive Political Science, 9 – 11 May 2018, Southampton

Designing Mixed Method Evaluation Research, 14 – 16 May 2018, London

Making and Measuring Impact, 15 May 2018, Edinburgh

Applications of Big Data to Social Sciences, 22 – 24 May 2018, Cardiff

Understanding Small Areas: Spatial Analysis of Population and Neighbourhood Data, 31 May – 1 June 2018, Manchester

Researching Lives through time: Qualitative Approaches, 11 – 12 June 2018, Edinburgh

8th ESRC Research Methods Festival, 3 – 5 July 2018, Bath

Cognitive Interviewing for Testing Survey Questions, 12 – 13 July 2018, Cardiff

Introduction to Programming, 17 – 18 October 2018, Southampton

Using Creative Research Methods, 21 November 2018, Southampton

The ESRC National Centre for Research Methods (NCRM) was established in 2004 as part of the Economic and Social Research Council’s (ESRC) strategy to improve the standards of research methods across the UK social science community.

NCRM acts as a strategic focal point for developments in research, training and capacity building related to research methods, cutting across social science disciplines.

NCRM brings together researchers from across the UK and internationally with a wide range of research methods expertise, at the frontiers of developments in research methodology.

NCRM disseminates innovations and developments in research methods through training courses and events and through other direct engagement with researchers, but also by cooperating with other organisations and initiatives with an interest in social science research methods.

For more information about the NCRM and its activities please see our website www.ncrm.ac.uk