Methods News

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Methods in 2017

At the end of each year we like to reflect on methodological developments and trends that dominated the particular year. In 2017 these included methods related to big data, new forms of data such as data collected from mobile phones, sensors and other electronic devices and the ethical issues related to dealing with such data.

Other developments revolved around methods that combine two or more disciplines, such as the biosocial research or methods combining computer and social sciences. We have also seen increase in the use and understanding of creative methods. Alongside such work, academics in the social science methods community have been testing and advancing established methods and also seeking to understand the ways we teach methods to build research capability.

This MethodsNews Newsletter cannot cover all the topical issues but we try to present an example of some of the above-mentioned developments. We feature three articles that tackle the 'new data' problem. One on ethics in social media research, one on the use of mobile devices to collect information about spending and one on anonymisation of data.

We also cover the creative methods area with an article looking at using creative methods in longitudinal research.

Our final two articles focus on the field of advancing methods that are well-established. The first article looks at probing 'don't know' responses in surveys and asks whether this is a good idea. We end with an article that discusses the possibility of conducting ethnography by proxy.

We hope you enjoy these articles and we are looking forward to seeing what methodological surprises and advances year 2018 brings!

Ethics in social media research: where are we now?

Matthew Williams, Pete Burnap and Luke Sloan, Cardiff University

Communications and connections harvested from social media networks are becoming part of the social scientist's data diet. Since 2011 the Social Data Science Lab at Cardiff University has been collecting tweets posted around national and global events using the in-house developed COSMOS software. These data, amounting to over five billion individual tweets, have been subject to analysis using an innovative blend of computational and social science techniques.

The research portfolio has focused on the area of risk and safety, in particular social tensions, online hate speech, mental health, demographic estimation and crime and security. Tweets collected around these topics create datasets that contain sensitive content, such as extreme political opinion, grossly offensive comments, and threats to life. Handling these data in the process of analysis (such as classifying content as hateful and potentially illegal) and writing about them has brought the ethics of using social media in social research into sharp focus.

Early on in the research we quickly realised that many of the learned society ethical resources were of little guidance, given their focus on non-digital data. Where addendums on using Internet data were written, they had little to say about social media. Papers were being published in reputable journals with tweets quoted verbatim, with unacceptable and ineffective methods of anonymisation, and without informed consent from users[1]. These researchers may have been satisfied by Twitter's Terms of Service that specifically state users' posts that are public will be made available to third parties, and by accepting these terms users legally consent to this. However, given the sensitive nature of some of these data, we argue researchers must interpret and engage with these commercially motivated terms of service through the lens of social science research that implies a more reflexive approach than provided in legal accounts of the permissible use of these data in publications. This necessitates taking account of users' expectations, the effect of context collapse and online disinhibition on the behaviour of users,

and the functioning of algorithms in generating potentially sensitive personal information.

Research on users' views of the repurposing of their social media data consistently shows that the majority wish to be asked for informed consent if their content is to be published outside of the platform which it was intended for[2]. This expectation may be at odds with the perceived 'public' nature of these networks, but we know that users' conceptions of what is public and private is blurred in online communications. Internet interactions are shaped by ephemerality, anonymity, a reduction in social cues and time–space distanciation[3]. The disinhibiting effect of computer-mediated communication means Internet users, while acknowledging the environment as a (semi-)public space, often use it to engage in what could be considered private talk. Twitter folds multiple audiences into a flattened context[4]. This 'context collapse' creates tensions when behaviours and utterances intended for an imagined limited audience are exposed to whole actual audiences.

Online information is often intended only for a specific (imagined) public made up of peers, a support network or specific community, not necessarily the Internet public at large, and certainly not for publics beyond the Internet. When it is presented to unintended audiences it

has the potential to cause harm, as the information is flowing out of the context it was intended for. Informed consent to publish is further warranted given the abundance of sensitive data that are generated and contained within these online networks. Potential for harm in social media research increases when sensitive data are published along with the content of identifiable communications without consent. In some cases, such information is knowingly placed online, while in other cases, sensitive information is not knowingly created by users, but it can often come to light in analysis where associations are identified between users and personal characteristics are estimated by algorithms. If published alongside identifiable posts without consent, these classifications may stigmatise users and potentially cause further harm.

In line with the points raised here[2] we propose that researchers conduct a risk assessment ahead of publishing tweets in research outputs. The decision flow chart[5] is designed to assist researchers in reaching a decision on whether or not to publish a tweet, and in what contexts informed consent (opt-in or opt-out) may be required.

References and notes

1 Removing usernames from posts is not permissible under Twitter's Developer Agreement and fails to meaningfully anonymise users when text content is searchable.

2 Williams, M. L., Burnap, P. and Sloan, L. (2017) 'Towards an Ethical Framework for Publishing Twitter Data in Social Research: Taking into Account Users' Views, Online Context and Algorithmic Estimation', Sociology, Online Advance Access (http://journals.sagepub.com/doi/full/10.1177/0038038517708140)

3 Joinson, A. N. (1998) 'Causes and effects of disinhibition on the Internet', In: J. Gackenbach (Ed.) The Psychology of the Internet, New York: Academic Press, 43–60.

4 Marwick A.E. and boyd d. (2011) 'I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imaged audience', New Media & Society, 13(1): 114–133.

5 http://socialdatalab.net/wp-content/uploads/2017/10/Tweet-Ethics-Flow-Chart.tiff

Innovations in measuring household finances

Annette Jäckle, University of Essex

Developing feasible and efficient methods for collecting accurate information about household finances poses many challenges. The "Understanding household finance through better measurement" project, funded by the ESRC Transformative Research scheme and NCRM, has been working on several new developments during 2017.

This research, which is being carried out using the Understanding Society Innovation Panel, includes:

(1) Experimenting with ways of collecting data about the whole household budget constraint in a single interview, that is, about income, spending and changes in assets and debts;
(2) Experimenting with ways of improving the reporting of income in a survey questionnaire, by showing respondents a summary of all income they have reported in the survey, and asking them to review and edit the summary within the interview;
(3) Reviewing different ways in which data about household finances can be collected that do not involve asking survey questionnaires, and reviewing the likely implications for the representativeness and measurement properties of data collected in this way (for example, linking to data collected by financial aggregators, credit card data, credit rating data, loyalty card data, or scanning till receipts or barcodes);
(4) Analysing the willingness of the general population to participate in a range of survey data collection tasks using their own smartphones or tablets (for example using the camera of their device, installing apps to enter data, or to track information about how they use their device, tracking GPS positioning, tracking movement using the in-built accelerometer, etc.);
(5) Trialling an app to measure spending, where respondents were asked to take pictures of their shopping receipts, or to enter the value and description of purchases directly in the app, for one month.

The focus of (1) has been on developing a feasible method of collecting information about the household budget constraint within a survey interview. Few existing household surveys collect such information: almost all surveys focus on only one or two elements of the household budget constraint. Having all of income, spending, and changes in wealth for the same household should lead to both improvements in data quality and

new research opportunities. We trialled a questionnaire module in wave 9 of the Innovation Panel where we asked respondents to report on all money coming into and going out of the household in the last month. To make this feasible, we used the very detailed information about income already collected in the survey; for other aspects such as spending we asked only for aggregate information. For changes in savings and credit accounts we experimentally compared two different sets of questions. The results suggest that it is possible to collect information about the entire budget within an interview. In the face-to-face interviews, showing respondents the balance of all their inflows and outflows in the last month, which by definition should match, led to respondents correcting their reports and resulted in improvements in the data. Respondents who completed the survey online however did not seem to engage with this reconciliation task as often.

The focus of (5) has been to assess the Total Survey Error implications of using an app to collect spending data. The potential benefits of collecting scanned till receipts to measure spending is that these provide objective data on purchases of goods and services, and do not rely on respondents to recall this information. However, not all respondents have access to a compatible mobile device, or are able and willing to do such a task for a survey. Data collected

with such an app might therefore not be representative of the general population. Combining data from the spending app with data collected previously in the Innovation Panel interviews shows that a relatively small proportion of the sample were able and willing to complete the task: 13% used the app at least once. Surprisingly, however, those who decided to participate tended to complete the task for the entire month: after 28 days 82% of participants were still using the app. Younger and more educated sample members were more likely to participate, as were women, and sample members who already do similar tasks for their own purposes, for example using apps to check their bank balances. Crucially, however, there were no differences between participants and non-participants in measures of income and spending collected in the Innovation Panel. Over time respondents shifted somewhat from scanning receipts to directly reporting spending in the app, suggesting that they preferred reporting their spending in that way. Work on examining the quality of spending data captured with the app is ongoing.

Further information on the project, including links to collaborators, presentations and working papers, is available at https://www.iser.essex.ac.uk/research/projects/understanding-household-finance-through-better-measurement

Creating the Anonymisation Decision-making Framework

Elaine Mackey, Mark Elliot, University of Manchester and Christine M O'Keefe, CSIRO

The publication of the book The Anonymisation Decision-making Framework[1] in July 2016 marked the culmination of a three-year cross-sector collaboration in the UK, and the beginning of new international collaborations to bring the work underpinning the book further afield. The topic, anonymisation, has not been well understood - as well publicised data breaches[2,3] attest - and yet it is of critical importance in this age of data; not just in a legal sense – what information is known about you and by whom has ethical, social, economic and political implications. The good news is that it is not a matter of data sharing versus privacy – you can have both if anonymisation is done well.

Anonymisation is an ongoing area of research – but although complex it is not an intractable problem. In 2012, the UK Information Commissioner's Office (ICO) published its Code of Practice on anonymisation[4] and in the same year provided the initial funding for the establishment of the UK Anonymisation Network (UKAN). UKAN provides information and advice to anyone handling personal data that needs to share it and as part of this work was tasked with developing guidance that could fill the gap between that which is given in a code of practice and that which is needed when grappling with the practical reality of doing anonymisation.

The initial funding supported a series of workshops attended by UKAN's core network[5] of thirty representatives drawn from academia, government, health, commercial and voluntary sectors. Under consideration were two core questions:

1) How should we define and describe anonymisation given the many different perspectives on it?

2) What would practical advice look like given that anonymisation is a complex topic requiring skill and judgement?

The workshops led to the development of the Anonymisation Decision-making Framework (ADF): a ten component framework that unifies the technical, legal, social and ethical aspects to provide a comprehensive guide to doing anonymisation in practice. The framework was captured and elaborated on in a book of the same name. The draft of

the ADF book was then subject to an extensive review process from both the core network and an international scientific group of experts. The ADF is underpinned by the data environment perspective which locates re-identification risk in the interaction between data and their environment, where traditionally such risk had been seen as arising (largely) from the data itself. The critical question for the data controller is shifted from 'how risky are these data?' to 'how might a re-identification occur for these data in that environment?' From this, a new concept for thinking about and doing anonymisation has emerged - functional anonymisation - which asserts that one cannot determine whether data are anonymised without reference to their environment.

In a natural extension of the highly participatory writing process, the UK authors have this year collaborated with CSIRO (the Commonwealth Scientific and Industrial Research Organisation) and the Office of the Australian Information Commissioner to adapt The ADF for the Australian context. One change from the UK book is the substitution of the term 'anonymisation' for 'de-identification', thus the Australian version is `The De-Identification Decision-Making Framework'[6]. In addition, the adaptation required revisions due to differences in the legal frameworks, the use of Australian examples and terminology, and the inclusion of some reference to the Five Safes framework gaining popularity in Australia. The publication of this resource in Australia was very timely given the recent Australian Government

Productivity Commission report on Data Availability and Use, and the release and subsequent retraction of two datasets on the data.gov.au government open data website.

Next year we plan to begin work on a second edition of The ADF book to take account not just of the changing legal landscape, i.e. the introduction of the General Data Protection Regulation (May 2018) and Digital Economy Act (2017), but also to capture our continued research on the topic.

References and notes

1 The Anonymisation Decision-making Framework. Elliot, M., Mackey, E. O'Hara, K and Tudor, C. (2016). http://ukanon.net/ukan-resources/ukan-decision-making-framework/

2 See CNN Money (2010) http://tinyurl.com/CNN-BREACHES

3 See Atokar (2014) http://tinyurl.com/NYC-TAXI-BREACH

4 Anonymisation: managing data protection risk code of practice, 2012 https://ico.org.uk/media/1061/anonymisation-code.pdf

5 UKAN is coordinated by a consortium of four partner organisations: the Universities of Manchester and Southampton, the Office for National Statistics and the Open Data Institute.

6 CM O'Keefe, S Otorepec, M Elliot, E Mackey, and K O'Hara (2017) The De-Identification Decision-Making Framework. CSIRO Reports EP173122 and EP175702. http://data61.csiro.au/en/Our-Work/Safety-and-Security/Privacy-Preservation/De-identification-Decision-Making-Framework

Creative methods in longitudinal research with young people

Susie Weller, NCRM, University of Southampton

Youth research has an established history of using creative approaches to gain qualitative insights into young people's lives. The past 15 years have seen a rapid growth in the application of visual/creative methods using, for example, drama, drawing, photography, film and digital communication technologies. Such approaches have sought to privilege young people's perspectives, and offer alternative and non-exploitative modes of engagement[1]. These studies are founded on collaborative work, adopting methods that draw on/incorporate participant's skills and interests. Such moves have not been without criticism with some questioning the theoretical premises and methodological foundations[2]. In my own work I have been keen to infuse creativity into different phases of the research process, not just data generation.

This summer I was invited to talk about my work at a creative research methods symposium, hosted by the University of Oxford. Developing a paper exploring the potentials and pitfalls of using such approaches presented the opportunity to reflect back over a decade-long qualitative longitudinal (QLR) study undertaken with Rosalind Edwards. The Your Space project followed the diverse lives of 50 participants from mid-childhood to young adulthood. We used tools, such as network maps, timelines and photographs to capture change and continuity in their sibling relationships and friendships over time. Creativity and adaptation feature as trademarks of many QLR studies that are, by their very nature, dynamic and evolving[3]. Our methods and approaches creatively shifted over time as we 'grew with' participants and as technological developments offered new ways of conducting research.

The symposium also presented the opportunity to consider creative ways to represent research outcomes. As each presenter spoke, graphic recording artist Chris Shipton sketched, condensing 40 minutes of speech into a one page cartoon; a medium apt for depicting complex messages in a simple, sequential form. The experience provided a new lens through which to explore my study. I was fascinated to see the artist's interpretations of the salient points. I was delighted that my key messages were received in the manner they were intended. He identified issues pertinent to QLR, such as sample

maintenance ('staying in touch'), reciprocity in research relationships ('providing a university reference'), snippets of the pros and cons of the tools/methods used, and nods to the theoretical underpinnings (social constructionism). Concurrently, I also felt I experienced the "peculiar effect of turning the observer into the observed"[4] whilst under the gaze of an artist-in-residence. I wondered how participants might feel about the caricatures. Amidst the feelings of vulnerability was also inspiration. Viewing the final artwork has encouraged more open thinking about the form research outputs can take; about alternative and striking ways to present key messages, as well as the potential for graphic recording in data collection and/or interpretation.

References

1 Robinson, Y. and Gillies, V. (2012) Introduction: developing creative methods with children and young people, International Journal of Social Research Methodology, 15(2): 87-89.

2 Gallacher, L., and Gallagher, M. (2008) Methodological immaturity in childhood research? Thinking through 'participatory methods'. Childhood, 15(4), 499–516.

3 Weller, S. (2012) Evolving creativity in qualitative longitudinal research with children and teenagers, International Journal of Social Research Methodology, 15(2): 119-133.

4 Balmer, A. (2016) Turning the tables, Sketching Research blog, retrieved on 26.9.17 from: http://projects.socialsciences.manchester.ac.uk/sketching-research/turning-the-tables/

Probing of "Don't Know" responses in surveys

Jouni Kuha, London School of Economics and Political Science (LSE); Sarah Butt, City, University of London; Myrsini Katsikatsou and Chris Skinner, LSE

When a respondent's answer to a survey question is "Don't know" (DK), we often regard this not as a valid answer but as a form of nonresponse. It is then a problem which we would like to reduce. One possible way of doing this is DK-discouraging questioning or probing. This means that the survey interviewer, rather than accepting a DK answer immediately, asks the question again and with gentle encouragement for a non-DK response. In our study, for example, probing took the form of the statement "We are interested in your views. If you are not sure please give the answer that comes closest to what you think", followed by the question being repeated once.

But is this a good idea? Probing can reduce the proportion of DK responses substantially, but this gain comes at a cost. Probing increases the length of the interview and the burden to the respondents. Perhaps more importantly, it can also affect the quality of the survey measurement, if answers obtained through probing are of a different quality than ones obtained without it. Ideally, probing should just provide enough encouragement for an initial DK-respondent to give a well-considered substantive response. It is, however, also possible that probing will pressure the respondent to give an ill-considered answer just to satisfy the insistent interviewer.

We compared the responses obtained with and without probing, to eight survey questions (on attitudes to welfare) asked of 4770 respondents in Bulgaria, Hungary and Portugal using the European Social Survey Innovation Sample. In each country, 75% of the respondents were randomly assigned to the treatment group where each DK response was probed, and 25% to the control group where probing was not used.

Probing converted around half of initial DK responses to substantial answers. Comparing the responses themselves, probed answers were typically more likely to have non-extreme values – such as the neutral "Neither agree nor disagree" – than were unprobed answers. But what does this tell us? There are broadly two possibilities. It could be that the observed

differences are due to a measurement effect of probing, for example that some of those neutral responses are hasty replies which do not agree with a probed respondent's true views on the question. But they could also be a sign of a selection effect, where respondents who need probing are genuinely different - here more neutral in their true views - from those who respond immediately. Probing is beneficial if there is a selection effect, but undesirable if there is a measurement effect.

Measurement and selection effects can be distinguished only if we analyse answers to several questions together. The eight questions in our study are used as two multiple-item scales for two latent attitudes, of the kind which are typically analysed using a latent variable model such as factor analysis. We combined this model with a second latent variable model for how a response was obtained (unprobed, probed, or not at all), in a way which allows us to examine the effects of probing. For example, a measurement effect is present if the latent-variable measurement model for a survey item is different for probed and unprobed responses to that item.

The results of the analysis showed that there was indeed a measurement effect. In other words, the observed differences between probed and unprobed responses were not explained only by the fact that these responses came from individuals with different levels of the attitude being measured, but also (and more importantly) by differences in how the responses behaved as measures of

the attitude. The magnitude of this measurement effect varied between different items and the three countries, but in most cases it was such that responses obtained after probing were weaker measures than were unprobed responses.

When there are measurement effects, the costs of probing are likely to outweigh the gains from less nonresponse. For this reason, our results provide evidence against the use of probing of "Don't know" responses in surveys, at least for the kinds of attitudinal items and respondents considered in this study.

For a full description of the study, see the article Kuha, J., Butt, S., Katsikatsou, M., and Skinner, C.J. (2018). The effect of probing "Don't Know" responses on measurement quality and nonresponse in surveys. Forthcoming in Journal of the American Statistical Association.

The role of the proxy ethnographer: a step too far?

Lydia Plowman, University of Edinburgh

In the days before Google, I wrote a research paper about enlisting a marketing manager in an electronics company to collect ethnographic data about the sales process on my behalf. I described the technique as ethnography by proxy, thinking that I'd coined the term.

Fifteen years later, I revisited the idea of using ethnography by proxy when I enlisted parents to take photographs of their children as part of a project to explore everyday lives at home. On that occasion, an online search quickly revealed that Wallman and colleagues[1] had originated the concept in 1980 in *Ethnography by proxy: Strategies for research in the inner city.*

A proxy is usually understood to mean the authority to represent somebody else. The legal origins of the word describe an agent or deputy and derive from the word 'procurator', an official of the Roman empire who carried out duties on behalf of the governor or emperor. The ethnographer's role in actively collecting, filtering and interpreting data is seen as a foundational element of traditional ethnography: deputising, or standing in for, this role may therefore be seen as a step too far. Presence and 'being there', whether virtual or face-to-face, is typically considered to be a prerequisite. The process of delegating some of the ethnographer's activities to participants in the research setting – ethnography by proxy – may therefore seem treacherous.

Wallman's team used proxies as interviewers because they were knowledgeable about inner city Battersea and, as locals, more likely to ensure a good response rate. In my case, the electronics company's reluctance to risk commercial confidentiality was my main motivation to find another person who could report on the conduct of sales meetings. For our study of children's everyday lives, the key challenge was the difficulty of conducting extended observational research in the home, especially beyond working hours.

In a UK climate of research performativity and utility in which extended periods of fieldwork are rare, this transfer of research activity to others is no longer unusual. Certainly, funding for overseas research on global challenges may require ethnographic work to be delegated to local research assistants if the UK investigators are not familiar with the environment or indigenous languages. Limited availability of funds also means that it is unexceptional for principal investigators to focus on management of a project, delegating the work of resource-intensive primary data collection, whether in remote or local cultures, to lower cost researchers.

However, ethnography by proxy goes beyond collecting and recording ethnographic data to its interpretation. While the data they gathered was designed to be a supplement to other sources, the proxy ethnographers were experts in their own domain whether they were residents, the parents at home, or the manager in the sales meetings. The marketing manager was building on his existing powers of observation and his ability to interpret and analyse people's actions in a sales context. The role of the parent-photographers was also an extension of their typical conduct: these days, it is more likely to be considered aberrant behaviour if parents do not use their mobile phone to take photographs of their child.

Across the three examples mentioned here, the urban setting, the engineering company and families at home, the proxy ethnographer was pivotal in linking the fieldworker to the people who are the 'others' of the research process. The fluidity between detachment from, and involvement in, the cultures they have been asked to report on requires careful navigation of participant identities and relations with the researchers who have more formalised roles. Those people that we routinely describe as informants, subjects or participants have a different relationship to the proxy ethnographer: rather than positioned solely in relation to an academic, they are locals, colleagues, customers, family members or friends. These different forms of research relationship can be beneficial: proxy ethnographers can more easily mediate the co-construction and dissemination of knowledge and create the potential for collaborative texts that may be accessible beyond academe.

While purists may baulk at the prospect of yet another tenet of ethnography being dismantled, revisiting the notion of ethnography by proxy helps us to think anew about the desirability and feasibility of the academic researcher's role as the lynchpin of the ethnographic endeavour. Ethnography by proxy may serve as a way of making ourselves more accountable to the data and our informants, as well as presenting a pragmatic solution to some of the challenges of conducting ethnography in current conditions.

Reference

1 Wallman, S., Dhooge, Y., Goldman, A. & Kosmin, B. (1980) Ethnography by proxy: Strategies for research in the inner city. Ethnos, 45, 5-38.
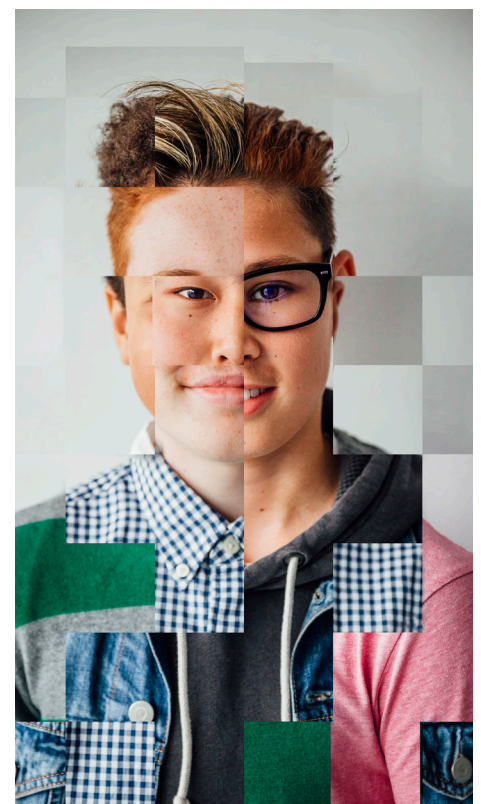
NCRM training and events 2017/2018

Web Survey Paradata, Mick Couper,
7 December 2017, Cardiff

Designing and Implementing Mobile Web Surveys, Mick Couper,
8 December 2017, Cardiff

Quant for Qual Researchers,
Luke Sloan and Malcolm Williams,
9 - 11 January 2018, London

Creating Data Policy in a Changing Data Landscape: A Workshop, Chair:
Mark Elliot, 16 January 2018, London

Introduction to Longitudinal Structural Equation Modelling with R,
Alexandru Cernat, 18 - 19 January 2018, Southampton

Advanced Spatial Analysis for Researchers using ArcGIS,
Gemma Gubbins and Graeme Hornby,
7 - 8 February 2018, Southampton

Applied GIS and Network Analysis for Social Science Applications,
Andy Newing, 1 - 2 March 2018, Manchester

Using Creative Research Methods,
Helen Kara, 15 March 2018, Belfast

Writing about Methods, Patrick Brindle,
20 April 2018, London

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