FQS FORUM: QUALITATIVE SOCIAL RESEARCH SOZIALFORSCHUNG

Volume 13, No. 2, Art. 12
May 2012

The Diverse Worlds and Research Practices of Qualitative Software

Nigel G. Fielding

Key words: trends in qualitative methods; new technologies for qualitative research; citizen research online; glocalization of methods; qualitative software

Abstract: The article considers the way that digital research technologies and online environments increasingly support new forms of qualitative research that have emerged as a result of new user groups taking up the practice of social research. New practitioners of qualitative research have entered the field from societies where qualitative research is a newly-established practice, and new cadres of "citizen researchers" have turned to qualitative methods for non-academic purposes. These groups challenge accepted understandings of qualitative methods. The article uses the example of qualitative software as a case study of how qualitative research is enabled by new digital tools that help new user groups extend the application of qualitative research methods.

Table of Contents

1. Citizen Research, New Research Communities, and Qualitative Software

This article discusses current trends in the practice of qualitative research and explores their relationship to developments in digital research technologies and online environments. The article argues that the field of qualitative research is expanding as new practitioners enter it, both from societies where qualitative research is a newly-established practice, and from increasing use of qualitative methods by "citizen researchers" who do not have a traditional academic background and who practice social research for non-academic purposes. Both groups challenge accepted understandings of qualitative methods. The article views these developments positively but suggests that established qualitative researchers need to understand and engage with the new developments to help them realize their potential. It takes the example of qualitative software as a case study of how the digital tools of qualitative methodology can support new uses of qualitative research and new user groups. [1]

The trends that the article discusses have implications for qualitative methods more generally. The trends are to be located against the context of the Western-centric nature of conventional understandings of research methodology, the idea that the accepted methods of social research are based on assumptions that are modeled on Western societies, especially that of the United States. Social theory tells us that the world is becoming a smaller and more connected place, and, as the practitioner base of qualitative methods widens to new practitioner groups,

new approaches to qualitative methods challenge established practices. To capture the idea that there are tensions between the global and local dimensions of research methods, methodologists speak of a "glocalization of method" (GOBO, 2011, p.417). [2]

Both the widening of the practitioner base of the social sciences, and the growing recognition that the precepts of our methods are based on the Western world's assumptions about the nature of society and knowledge, have a substantial technological dimension. The research world has been transformed in recent years by new technologies, and no field more so than qualitative research. Qualitative software (or "CAQDAS," i.e., Computer Assisted Qualitative Data Analysis Software; FIELDING & LEE, 1993) is prominent amongst technologies that have changed how we do qualitative research. Moreover, we are currently entering a new moment that will make the impact of qualitative software up to now seem very "local." This is due to global developments that are opening up methods to new research traditions. [3]

The Internet and social interaction sites like Second Life and Farmville, and Web 2 social media tools like Facebook, Twitter, and the "blogosphere," are opening up research to "citizen researchers," people who have no social science qualifications or experience and who want to do research for purposes other than adding to academic knowledge. For instance, they might want to do research about schools in different parts of a town they are moving to so as to identify the school whose students perform the best in public examinations, with a view to placing their children in the best possible school. [4]

The Internet has stimulated many organizations to make data and other information resources freely available, but has also encouraged organizations to improve access to existing resources by posting them on the Web. This applies particularly to official data, which has often been published but, prior to the Internet, has been hard to find. Such material is sometimes referred to as "the grey literature." Aided by the increasing practice of "open government," bureaucratic records have increasingly become freely available online (for a UK example, see http://www.direct.gov.uk/). For instance, the UK government publishes online league tables every year that compare school performance on a variety of indicators. Another example of citizen research is people involved in voluntary work for their community, for instance, users of sports facilities who want to ensure that the facilities are well run and that they offer what people want. Or they may be politically motivated people who do research to get information they can use to lobby government, or criticize a policy, or organize a demonstration. [5]

All of these purposes need a way to compile databases, organize information, and search for patterns. Qualitative software can take that role, and in this respect the parallel example of Web survey software is instructive. Online survey programs include *SurveyMonkey*, *KeySurvey*, *Zoomerang*, *SurveyCrafter* and *Cool Surveys*. Web survey software has caught on because it is cheap, quick and can provide a satisfactory basic analysis. Its use has spread far outside the

academic world and the world of survey polling organizations. It has done this despite some well-recognized problems of online survey methods. The main issue has been sampling, because people who are online tend to be younger, better-educated and more IT-literate. This means that respondents who do online surveys may not be representative of the general population, although this limitation will lessen as computer literacy spreads. In most countries, computer literacy is now part of primary education and, as access grows, online sampling is becoming more representative. Software like *Survey Monkey* or *KeySurvey* is increasingly widely used outside the academic world, in business, politics, schools and citizen research. [6]

It is only a matter of time before qualitative software sees similar uses. Qualitative software training providers, including projects like Computación Cualitativa Consultores (Mexico); cualsoft.com (Spain); DATASENSE (USA); SdG Associates (UK) and the CAQDAS Networking Project (UK), can readily cite many examples of non-academic users, ranging from doctors researching aspects of their patient population and lawyers analyzing evidence statements through to environmental activists using the software to analyze pollution regulations. [7]

As we can see, citizen research is opening up the community of users of social research methods. However, some methodologists may feel snobbish about this and believe that research cannot or should not be done by amateurs. This is a short-sighted perspective. Established social researchers cannot put their hands up and stop the sea, as the widespread adoption of online survey software for research by individuals, community organizations, and businesses demonstrates. Established academic and professional researchers need to recognize these activities as research, because that way we can help those who do it understand how to make their work valid and reliable, and thus provide a stronger basis to advance their purposes. [8]

There is a long-established and contentious argument in social research methodology that societies must attain a certain level of development before they are susceptible to social research. This argument developed initially in respect of competence to participate in survey research (the most obvious requirement being literacy) but in recent years has led to discussions around the idea of "the interview society" (GUBRIUM & HOLSTEIN, 2001). We might debate whether the assumptions behind this view actually mask Western assumptions about the qualities a polity must display as a form of social organization sufficiently developed to qualify as a "society," but there is a kernel of truth in the idea that some basic things need to be present—both in terms of it being possible to conduct social research and in terms of social research having a useful purpose —before social research can happen. Academic social research is becoming more widely practiced in countries where it used to be rare. This is so for several reasons. One is where levels of literacy and education have until recently been too low to either support a research community or to enable citizens to respond to research interventions. [9]

Another reason that official and academic social research is expanding relates to the increasing perceived legitimacy of qualitative research and of social research more generally. When Margrit SCHREIER and I were editing a special issue of *FQS* (SCHREIER & FIELDING, 2001), we came across authors who believed in qualitative methods and stealthily used them but were afraid that if they published about their use of qualitative methods they would lose their jobs. If they published in our special issue of *FQS* they would be publicly admitting that they used methods that were condemned by the research community in their countries. Both countries were in the sphere of US influence. For reasons of global politics the countries in which they were located had to pay close attention to the preferences of the US Government, and this position extended to the university sector. When their university systems were formed they were modeled on the position in the US. At that point in time the US social science establishment was strongly oriented to quantitative methods and was highly critical of qualitative methods. The established opinion was that findings from qualitative research were not valid or reliable. While these societies remained under US influence this position rigidified, and remained in place long after US social science had itself adopted a more eclectic understanding of social research methods. Only in recent years has the academic establishment in these countries started to change. Slowly, qualitative methods are getting a niche in what used to be societies with a narrow positivist approach to social science. [10]

The standing of qualitative methods is especially important because they are accessible methods that most people can use—at least at a basic practical level—without a great deal of training, and qualitative software lends itself to application as a database into which citizen researchers can deposit all kinds of information. Indeed, it is well-established in research on users of qualitative software that many find such software most useful as an "electronic filing cabinet" and do not in fact employ the analytic tools and features provided by the software beyond straightforward information-sorting procedures. The electronic filing cabinet tools are equally useful if one is conducting research for a real world purpose like making an input to the urban planning process to defend the interests of the neighborhood one lives in. [11]

A further reason that social research is opening up beyond the established research community relates to societies where for a long time it was not just the effect on reputation but on one's very existence that constrained social research. Social science can be a strong weapon against repressive governments, and, as more representative forms of government spread, we see an increase in the size and confidence of the social science community. For example, in recent years this has been apparent in the former Soviet bloc countries of Eastern Europe. Social researchers in these countries are particularly interested in methods for secondary analysis of qualitative data because they are using these techniques to explore the mass of bureaucratic and administrative textual data left behind when the Soviet system collapsed. In the case of other countries qualitative research has existed as a progressive or emancipatory activity or has been used to help soften the effects of harsh government policies and/or social disaffiliation. A good example is the participatory research and action research traditions in

Latin America, which have, for instance, contributed important studies of the situation of migrant laborers. [12]

For several reasons, then, qualitative methods are becoming more freely and widely practiced than before due to increasing prosperity, more open societies, and researchers and citizens becoming more confident about exploring their social world and challenging the existing social arrangements and policies. [13]

Research suggests that qualitative software has helped to legitimize qualitative research in Western societies (AGAR, 1993) and persuade policymakers to take qualitative work seriously (FIELDING, 2010). Qualitative software can make research findings more robust, with higher reliability and validity, and this lies behind the part it has played in legitimizing qualitative research. This may be a considerable resource as it enters new research environments. Moreover, the features that qualitative software has that make analytic work "transparent" enable users to show skeptics how they reached their conclusions, and its features supporting the integration of quantitative and qualitative data make it a natural vehicle for multidisciplinary teamwork. The teamwork issue is especially important both in countries where research resources are limited and so everyone needs to work together, and in collaborative research where communities of shared interest are separated by distance, such as in alliances of environmental activists or amongst political activists who come together around a common cause that is not based on the local spatial dimension of traditional constituency politics. [14]

2. Online Research in a "Glocal" Context

I want now to consider what new demands citizen-based research in online environments might make on established methods and what role qualitative software can play in helping to establish methodological practices that challenge what have until recently been taken as foundational or generic principles of research methodology. [15]

There are a number of assumptions that social science customarily makes about methods that are more open to challenge than is usually imagined. As discussed above, between the 1920s and 1970s the methodology literature generally assumed that society and social relations had to be of a certain level of development for survey and interview fieldwork to be applied, a view that is still held by some methodologists. As variation in conditions determining openness to social research diminished and social homogeneity increased within the US as the great waves of immigration of the nineteenth and early twentieth centuries subsided, the American social science community increasingly assumed that the methods developed there applied universally. They spoke of "generic" methods and promoted "standardized procedures," despite evidence that standardization could not in practice be reliably achieved even in advanced societies, as was shown by PENEFF's (1988) highly revealing study of the fieldwork practices of French survey researchers. PENEFF demonstrated that rather than following the strict sampling strategy laid down by survey designers, the frontline fieldworkers

used their knowledge of the locale to identify individuals who they knew had a lot to say about the subject of the research. The highest validity data was from such sources. In other words, the survey design was re-directed along qualitative lines and the resulting data was more robust than if the original random sampling approach had been followed. Notwithstanding such insights into the reality of survey fieldwork, it was long believed that standardized methods could not be achieved in "less advanced societies." However this was seen as due to their backwardness rather than due to the problem of cultural translation. [16]

This position began to change in the 1960s, a period of intellectual change in the academy that was partly related to the social turbulence in wider Western society, much of it engendered by the counter-cultures that sprung up around opposition to the Vietnam War. The resurgence of qualitative methods following the 1967 publication of GLASER and STRAUSS's book on "Grounded Theory," and the more recent rise of postmodernism and its spread from philosophy and cultural studies into the social sciences, particularly in North America, Britain, Scandinavia, France and Italy, led to increased questioning of the idea that established research methods are generic. It is increasingly recognized that, rather than generic, all research methods are based on particular cultural assumptions. Cross-cultural researchers increasingly accept the argument by writers such as LIAMPUTTONG (2010) that methods need to fit the specific culture being studied. Standard methods have especially been challenged in qualitative and mixed methods. [17]

A very significant form of citizen research has emerged over recent decades on the part of communities such as Native Americans in the US and First Nation peoples in Canada. These communities have sought to resist the increasing disappearance of their culture into the homogenizing blend of the surrounding society, which is not only a threat to their culture but brings with it social problems such as alcoholism and hate crime. Some researchers have sought to assist these communities in their efforts to maintain their sense of cultural integrity by working with them on community life history studies, involving extended interviews with tribal elders, lengthy periods of participant observation, and other fieldwork methods. A telling example is BLACKMAN's life history study of a member of the Haida community in the Queen Charlotte Islands off the northern coast of British Columbia (BLACKMAN, 1982). BLACKMAN spent a long time taking detailed life history data from her subject, Florence DAVIDSON, and other community members, resulting in an anthropological monograph. [18]

The example is "telling" because it took an unexpected turn. Life histories are increasingly read by their subjects and other members of their group, and DAVIDSON's relatives said the book would have been better if BLACKMAN's anthropology was deleted and the book was just transcripts of DAVIDSON. Others who disliked DAVIDSON, who was the daughter of a tribal chief, said the book was a pack of lies, and academic critics complained that the book, which was sold as a souvenir to tourists, said nothing about conflict in the community. These developments led some of the community residents to document their own versions of events and accounts of community life; BLACKMAN's research

subjects captured and transformed the standard practice of life history research. They adapted the procedures of life history methods to their own purposes, which were to condemn the conditions perpetrated on them by the white community, and to hand on this knowledge to the younger generation who they hoped would preserve the lifestyle, beliefs and culture of their community. Not only did some in the community write their own accounts that they felt better reflected reality, but BLACKMAN also did something which was unusual for a life history study. She published a second edition of the DAVIDSON study with less academic content and more accounts from DAVIDSON herself and her community. Thus, citizen research can help a community form its own sense of itself, leading it to recognize the complex effects of its interaction with the external society as well as its own internal tensions. It can also lead to a more accurate and fuller picture of reality for outsiders, including the research community. [19]

Cases like this show that Michael BURAWOY's (2000) critique of qualitative methodology for being too Anglo-centric and culture specific applies even when doing research in "advanced" societies like the US and Canada. Sociological fieldwork imported a number of assumptions from anthropology (O'REILLY, 2005). The foundational period of anthropology was also the heyday of European colonialism, and many of the premises underpinning the original anthropological approach to fieldwork were based on assumptions about the nature of fieldwork participants that were strongly influenced by the relationship between the colonizing power and the "subject peoples." The social, economic and political circumstances of the late nineteenth and early twentieth centuries are not the reality of the present day, but our understanding of field relations stays rooted in the past. [20]

What is the connection between all of this and qualitative computing? When CAQDAS first came on the scene in the mid-1980s, its appeal to Western social scientists was that it facilitated a systematic approach to analytic procedures that were very hard to do manually. Developers of first generation software largely wanted to replicate in computer software the coding and data organizing procedures that already existed, and most of the first generation software aimed to support the Grounded Theory approach to analysis. However, as CAQDAS has become part of the everyday practice of social research it has had an increasing role in promoting new approaches to analysis, using sophisticated data representation features like charts, matrices and word clouds, and systematic analytic techniques like Boolean retrieval strategies or RAGIN's Qualitative Comparative Analysis (BYRNE & RAGIN, 2009) that enable causal analysis with qualitative data. In other words, CAQDAS has begun to shape qualitative analysis in new ways that go beyond the analytic approaches that were around when it was first designed. [21]

CAQDAS has also provided support to handle new kinds of data, such as digital video and dynamic material downloaded from the Internet such as blogs, and to address a major challenge in social research, the integration of quantitative and qualitative data. Indeed, as the recent arrival of support for geo-referencing

shows, CAQDAS can handle just about any kind of data, and for this reason it now plays a major part in mixed methods research. [22]

This diversity of innovation is reason enough for CAQDAS to be very useful in new approaches by researchers outside the Western tradition. Some of the most important resources CAQDAS offers such researchers, however, lie in its original features. One of these is its support for writing meta-commentaries on analytic work while analysis is in progress. The tools for writing analytic memos were provided because memo writing is a fundamental part of grounded theory methodology, but they can also be used to construct a narrative of decisions made during the analytic process. Similarly, audit trail features have been there since the earliest versions of qualitative software, and they allow researchers to retrace the steps in the analytic operations they have performed. The kind of exploratory provisional analysis that may be associated with new uses and user groups also benefits from the software's flexible coding schemes that let users run the analysis repeatedly in order to see what differences a change makes, or to repeat an analysis on new data. [23]

If we think of BLACKMAN's study, these tools let the researcher allow for multiple interpretations, annotate the data to show why they assigned a particular code rather than another, or indeed to assign multiple codes reflecting different perspectives on the data, building a complex coding system that tells more than one story at once. One can even imagine qualitative software becoming the repository of a community's collective memory, holding competing accounts, multiple artifacts, and allowing users to elaborate difference senses of what it means to be a member of, say, the Haida community. These features mean that qualitative data analysis is open for inspection and critical review in a way that was not possible before, and this gives qualitative research a stronger response to critics who claim that the findings of qualitative research are anecdotal or based on the perspective of the researcher and so are purely subjective. [24]

As researchers from outside the Western circuit introduce new approaches based on different cultural assumptions, CAQDAS will help old and new traditions of social research engage with each other by providing a vehicle for discussing how conclusions were drawn, evidence was weighed up, and gaps in analysis were filled. [25]

3. Citizen Research and Digital Technologies

Qualitative software could be a significant and fundamental tool to assist the activities of citizen researchers. Research with a practical focus or community orientation has always been around, but it has been transformed by network technologies like the Internet, mobile telephony and high performance computing. Such technologies are opening up methods and techniques that were formerly the monopoly of social science (HARDEY & BURROWS, 2008), enabling citizen research by the sheer abundance of raw materials available online. [26]

There are both benefits and risks in this, because the Internet is "*both* 'one of the most disruptive *and* transformative innovations we have ever witnessed'" (p.14, emphasis added). Whether social scientifically-literate or not, online citizens can now answer questions and address needs that matter to their daily lives without resort to the norms and standards that feature in the established research community. The challenge is to create a support infrastructure to enable citizen-based research methods that are robust when used by non-specialists. [27]

There is strong evidence that citizen research practices are spreading to qualitative software; for instance, since the 1990s, projects like the CAQDAS Networking Project, and a number of independent trainers who provide introductory and advanced learning in the use of qualitative software, have trained health professionals, lawyers, teachers and others who use qualitative software but lack social science qualifications (FIELDING & LEE, 2002). The free availability of demo copies of qualitative software and freeware/shareware, along with new features, means that such use is growing and spreading to other citizen's groups. [28]

Other examples of the technological equipment increasingly available to citizen researchers include the online survey tools mentioned earlier; the free online availability of official databases (such as school district and police information, postcode/zip code data and detailed official maps); geo-referenced IT tools and Web 2.0 techniques for information discovery like the GeoWeb and Crowdsourcing[1]; and Internet based information "mash ups" mixing data types and methods. These tools can be important in addressing social issues such as the democratic deficit at election times, by providing information that is not otherwise available. For instance, ahead of the UK general election in 2010, a 6,000 person crowdsourcing effort compiled a database of all English parliamentary candidates' views on local issues, information that was not otherwise available without searching for each candidate's view in local newspapers in their electoral district. This both shows the political value of citizen research and also that its products in turn become a resource for mainstream research. [29]

The ground for citizen research has not only been created by new technological resources but by the growing number of people with at least some understanding of social science. Social sciences and humanities account for 9% of gross expenditure on research across 20 European countries (FLOUD & MAKAROW, 2009). The increasing volume of social science research reflects growing recognition of its value, as does the significant rise in social science graduates, which were up by over 50% between 2000 and 2006, growing to over 1,500,000 across Europe). There are many more social science graduates than those who commit to it in career terms (there are an estimated 150,000 FTE social science researchers in the 22 largest European economies excluding Russia but including Turkey). This means there is an increasingly research-minded worldwide community that can be expected to devote online time to research, whether for

1 Crowdsourcing is a distributed problem-solving and production process that involves outsourcing tasks to a network of people.

instrumental purposes (e.g. choosing a home), leisure purposes (e.g. tracing family ancestors) or community purposes (e.g. party politics, voluntary work, community activism and campaigning). [30]

Much citizen research relates to place and space, that is, to the realm of social geography.

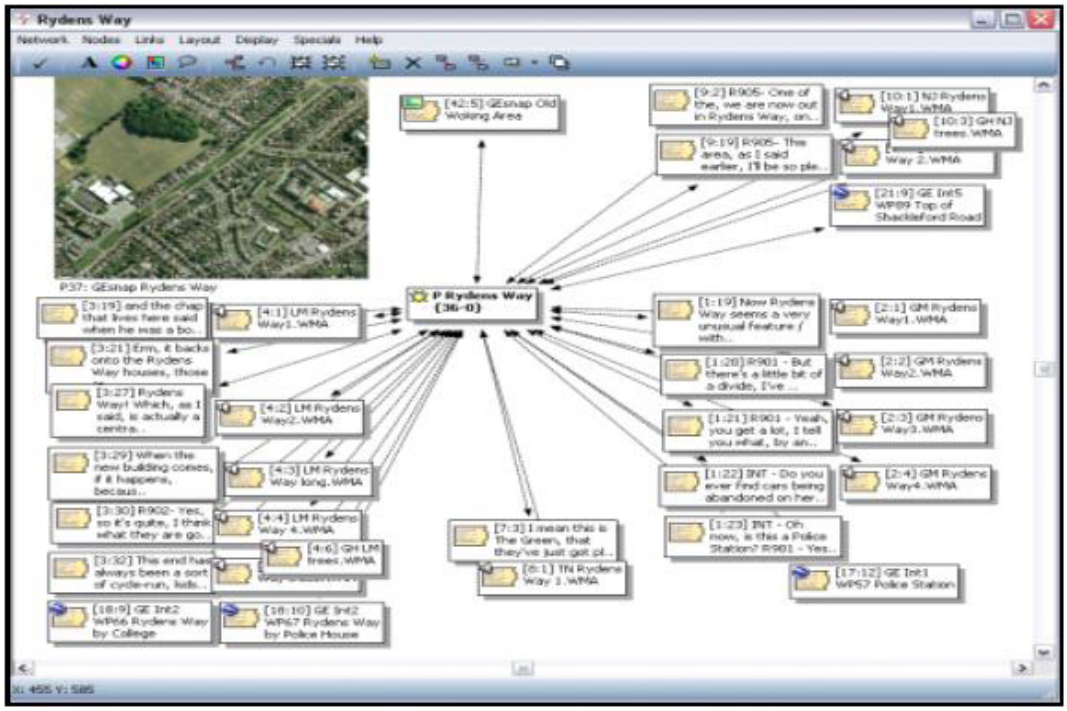

Figure 1: Dataset linkage in 3D [31]

Qualitative software now offers support for complex, multiple dataset linkage around 3-dimensional representations of physical space, and CAQDAS software can be fully-integrated within a Geographical Information System functioning as a "desktop" for all the data streams flowing into a research project. For example, a desktop display can be set up to enable users to switch from a cartographic map to a Google Earth neighborhood view, zoom in on a property in which an interview has taken place, access a transcript in which the respondent said the view from the window made her feel unsafe, see the feature the respondent referred to in an image file, and select a crime map to see if it is a hotspot. At each stage a given step can function not only as a method of discovery but a basis to build up the analysis; for instance, the respondent's feelings about the view from the window can be entered as an analytic memo in the CAQDAS package, and the offence rates in the hotspot map can be tallied with equivalent data for views from other windows, relating resident's feelings and attitudes to visible physical features. [32]

Geo-referencing has many citizen research applications. For instance, police and concerned citizens can combine information from multiple data sources to identify precisely where street lighting is poor and makes people feel unsafe. New

features in qualitative software support sociology's increasing acceptance of the need to analytically interrelate the spatial and temporal dimension in complex social processes.

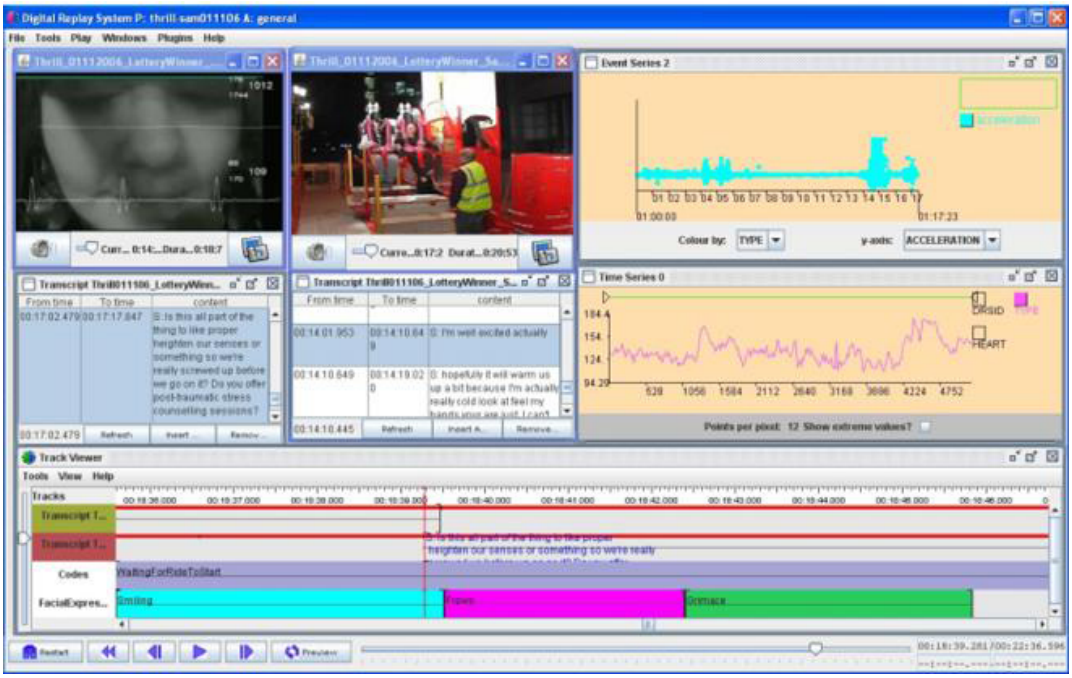

Figure 2: The Digital Replay System (DRS) interface (KNIGHT, TENNENT, ADOLPHS & CARTER, 2010) [33]

New CAQDAS tools such as the DRS package can serve as a comprehensive "desktop" in which to combine information from spatial resources with other qualitative data and with very exact indicators of interaction, such as the time taken by an activity and the physiological intensity related to it. The screenshot in Figure 2 shows two synchronized videos, the transcripts of the videos (which are also synchronized), a graph showing physical data (acceleration), a graph showing biometric data (heart rate), and a track viewer which supports the coding system as well as showing representations of the transcripts and videos. [34]

Another software innovation, JUNG and ELWOOD's (2010) hybrid of CAQDAS and Geographical Information Systems, "CAQ-GIS," directly integrates qualitative and statistical data into multi-layered maps and other spatial representations. CAQ-GIS uses a Visual Basic Application to integrate GIS with CAQDAS. The qualitative data is directly encoded into the GIS database. This makes it possible to fully integrate spatial analysis and qualitative analysis. Further, the program enables the assignment of multiple codes to single locations, using hot-links on the qualitative codes in the cells that form the map grid. Indeed, other meta-data can be linked in the same way, such as deprivation scores and Area Output Classifications. Geo-referenced applications are especially valuable in fields linking space, place and inequality, such as health research, where it is important to see whether there are systematic patterns of poor health associated with particular geographical areas, such as when research examines the comparative

performance of different hospital districts. Convergence between GIS and qualitative software supports data integration allowing researchers to relate outcome-based spatially-defined inequalities with process-based information about their origins.

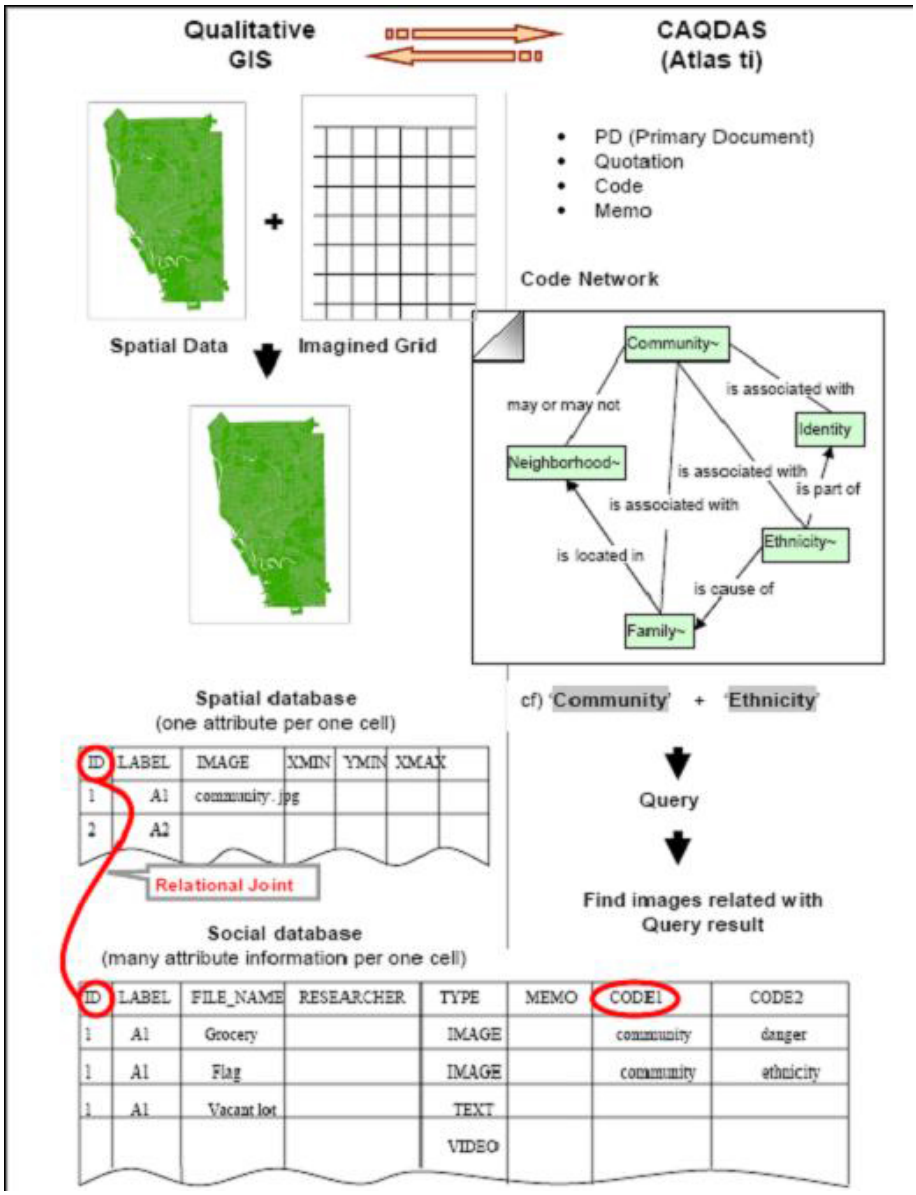

Figure 3: Jin-Kyu JUNG's "CAQ-GIS" program [35]

Similarly, the CAQDAS field's increasing engagement with resources for visual analysis reflects the ready availability of digital video data, including visual data streamed over networks such as the Access Grid session shown in Figure 4.

Figure 4: An Access Grid session [36]

Access Grid is a video teleconferencing application that runs over networks such as the Internet and employs several cameras recording the same interaction and multiple video feeds from several different external sites coming in at once. Users increasingly want to work by comparison and contrast between several video feeds. CAQDAS tools enable such synchronization. This could open up citizen research where people want to edit and interpret material like YouTube clips. [37]

4. The Ethical and Political Economy of Emergent Research Practice

The accessibility of words and other non-numerical forms of data, and the fact that much citizen research involves work with documents such as bureaucratic records, planning regulations, policy statements and so on, makes CAQDAS attractive to citizen researchers. It has long been recognized in the CAQDAS field that training has not kept up with demand, and university training in qualitative software is still less common than in statistics software like SPSS. The emergence and growth of citizen research, therefore, represents a large training challenge for social scientists. [38]

Confronted by the growth of citizen research, social scientists can either criticize from the outside the inevitable failings of amateur research, highlighting problems of validity, sampling, and interpretation, or seek to educate the new practitioners of research and thus enable the research voice to be heard by new audiences and to be used for new purposes. Given the online route by which many citizen researchers come to research in the first place, the provision of online training and learning opportunities could be very important. The basics of most qualitative software packages can be learned in half a day, and if one needs to include numbers, such as crime statistics or web survey output, the packages offer tools for quantification and integrating quantitative and qualitative data. From the parent comparing schools to the community activist campaigning on issues like the environment, citizen research can be supported and improved by qualitative software. [39]

I have argued that qualitative software can provide an engine of citizen research and a stimulus to research in developing social science communities. However, it would be naïve to conclude that the picture is a completely happy one. Change is often treated as if it were all good or all bad, but the reality is usually mixed. For instance, the Association of Internet Researchers has spent many conference hours debating the new challenges to research ethics that come in a digital environment. We might ponder the example of a computer scientist who had done some research on Twitter. He found that as well as peaks and troughs in tweets according to the time of day, there were parts of cities where people were especially likely to send tweets with particular kinds of content. That was an interesting finding, but one that could only be made by intercepting the actual content of the messages being sent. Twitter users can opt whether to make their Twitter messages public or not. Some may see no problem in capturing tweets sent by people who have made their messages public. One might ask, however, what our computer scientist would do if he captured a message where someone referred to having just bought illegal drugs or having done some other illegal act. The more citizen researchers we have the more we are going to run into challenges to our ethical codes. Even if we accept the interception of tweets by those who have made their Twitter postings public, there remains a problem of sampling bias in that there may be systematic differences between those who do and do not make their tweets public. Technical and ethical issues are entangled in new ways by new applications of qualitative methods. [40]

We also encounter entangled technical and ethical issues in work with visual data. Visual data almost inevitably makes research participants identifiable. Better technical solutions are needed. Others who work with visual materials have developed solutions that CAQDAS developers might take on board. For instance, standard Photoshop techniques that employ image rendering might be used to overcome identifiability while not obscuring the paralinguistic ("body language") features of analytic interest. Developers could consider the tools in photo and video editing software as a way to move beyond the limitations of current CAQDAS features. [41]

We should also be careful about assuming that the Internet and Web 2 technologies offer tools that will always find progressive, democratic applications. Western politicians tend to believe that the spread of the Internet automatically promotes democracy, and during 2011 anyone who watched the television news saw this kind of reporting of the events in Tunisia, Egypt, Libya, and elsewhere in the Middle East. However, Internet access in Libya is not as widespread as in Egypt but journalists found that every Libyan somehow knew that 17 February 2011 would be the day people in Benghazi would take to the streets. The point is that new media are not the only way news spreads. [42]

MOROZOV's book "The Net Delusion" (2011) critiques the assumption that radical socio-political changes have been due to new technologies. He finds no convincing evidence that the Internet promotes democracy and points out that dictators and their intelligence services can use it to further their goals just as much as radicals and democrats. The reality is that these new media may have

helped hasten the inevitable but the currents of change had to be there in the first place. This is not to say that it is unimportant that the new media can accelerate change whose momentum is already gathering. It is widely accepted that a late night YouTube posting by a Benghazi protestor appealing to people in Tripoli to join in helped spread protests to that city (despite the antipathy between the residents of these two Libyan cities). [43]

The fact is that there is no empirical evidence that conclusively demonstrates how social media interact with political unrest. Much Web interaction is marked by indifference or gesture politics. Many users in non-democratic countries are more interested in pop culture than in the tracts about human rights and elections that can also be found online; in other words, freedom of information in repressive countries is no guarantee that healthy political debate will follow. For instance, there is little active Internet censorship in Russia but the government has co-opted and created Internet celebrities and encouraged them to produce a mix of vulgar entertainment and bellicose expressions of Russian nationalism. Genuinely alternative views find it hard to get through. [44]

MOROZOV (2011) shows that technology played a mixed role in the so-called "Twitter Revolution" in Iran in 2009. Activists did use Twitter and Facebook, often launched from mobile phones, to upload videos of police brutality and spread news of demonstrations, but authorities also used information technology to trace users, block services and close websites. Much the same happened in Syria in 2011; subject to government bans on foreign journalists, video of military action against protestors taken using cell phones provided the world media with an indication of the savage action being taken by the government, but the government also used the signals to trace where the protestors were and who they were communicating with. As to less dramatic protest, such as the anti-capitalist demonstrations around the New York and London stock exchanges in 2011, many Facebook political campaigns are single click expressions of solidarity that do not lead to further commitment. As of mid 2011, the Facebook "Save the Children of Africa" campaign had raised an average of less than one two-hundredth of a US cent for each Facebook "friend." [45]

Like the conundrum of Internet activism, even after thirty years of CAQDAS we have only a limited idea of how people use it. There are few empirical studies of users and even fewer that are independent and look at users of a range of packages. This kind of information is commercially sensitive. This leaves the field quite reliant on anecdotal information, and what we have is tantalizing rather than definitive. For instance, there appears to be especially strong interest in visual data amongst British CAQDAS users, mixed methods uses are big in the US and Germany, users in France are text-focused and so on. The interesting thing is what patterns may emerge from citizen researchers and researchers in emerging social science communities. [46]

For instance, one might predict that geo-referencing tools will be important in developing societies because they can be very useful in studying land-use and also the environmental impact of major projects like dams and power generating

stations (KNIGGE & COPE, 2006; NIGHTINGALE, 2003; FIELDING & CISNEROS-PUEBLA, 2009) or that citizen researchers will especially want strong support for work with visual data because images are compelling carriers of dense meaning. The fact, however, is that we just do not know yet and our record of understanding how people use CAQDAS is still lacking. [47]

Another important challenge is what we might call the political economy of research capacity. Given the current economic situation in many countries we should consider the challenge posed by limited resources. Secondary analysis of qualitative data is one way we might address this challenge. Anyone who has worked with qualitative data is likely to feel that there is always more that could be done with the data. A number of countries have invested in archives for qualitative data and the *Council of European Social Science Data Archives* currently seeks to link together all the archival data organizations across Europe. Staff of *Qualidata*, the UK qualitative archive and the longest established in Europe, are training archive workers in Austria, the Netherlands, Switzerland, Ireland, Lithuania and Australia (see the *FQS* special issue published in January 2011 on "Qualitative Archives and Biographical Research Methods," edited by Miguel S. VALLES, Louise CORTI, Maria TAMBOUKOU & Alejandro BAER). Fieldwork is expensive, and if times are hard we can get more out of the data by engaging with secondary analysis. It is no coincidence that *Qualidata* is also a major promoter of qualitative software. [48]

Both online citizen researchers and professional researchers in developing social science communities have to negotiate the expense of software, and although CAQDAS packages started cheap and there are some freeware and Open Source applications available, the more sophisticated software can be expensive. There is also the cost of getting trained, and although there are a number of individuals and organizations offering it, their distribution is patchy. Even in the US, it is far easier to access qualitative software training on the East Coast and the West Coast than in between. [49]

Even so, these are obstacles that people have successfully negotiated before and the history of methodological innovation inspired by the adaptation of new technologies for social research purposes should lead us to be optimistic that when citizen researchers overcome such problems they will transform the worlds of social research, and that qualitative software will have a prominent part to play in it. [50]

References

Agar, Michael (1993). The right brain strikes back. In Nigel G. Fielding & Ray M. Lee (Eds.), *Using computers in qualitative research* (pp.181-194). London: Sage.

Blackman, Margaret B. (1982). *During my time: Florence Edenshaw Davidson, a Haida woman*. Seattle: University of Washington Press.

Burawoy, Michael (2000). Introduction: Reaching for the global. In Michael Burawoy (Ed.), *Global ethnography* (pp.1-40). Berkeley, CA: University of California Press.

Byrne, David & Ragin, Charles (Eds.) (2009). *The Sage handbook of case study methods*. London: Sage.

Fielding, Nigel G. (2010). Mixed methods research in the real world. *International Journal of Social Research Methodology*, *13*(2), 127-138.

Fielding, Nigel G. & Cisneros-Puebla, Cesar (2009). CAQDAS-GIS convergence: Towards a new integrated mixed method research practice? *Journal of Mixed Methods Research*, *3*(4), 349-370.

Fielding, Nigel G. & Lee, Ray M. (Eds.) (1993). *Using computers in qualitative research*. London: Sage.

Fielding, Nigel G. & Lee, Ray M. (2002). New patterns in the adoption and use of qualitative software. *Field Methods*, *14*(2), 197-216.

Floud, Roderick & Makarow, Marja (2009). *Vital questions: The contribution of European social science*. Strasbourg: European Science Foundation.

Glaser, Barney & Strauss, Anselm L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.

Gobo, Giampietro (2011). Glocalizing methodology? The encounter between local methodologies. *International Journal of Social Research Methodology*, *14*(6), 417-437.

Gubrium, Jaber F. & Holstein, John A. (2001). Introduction: From the individual interview to the interview society. In Jaber F. Gubrium & John A. Holstein (Eds.), *Handbook of interview research* (pp.3-32). London: Sage.

Hardey, Michael & Burrows, Roger (2008). Cartographies of knowing capitalism and the changing jurisdiction of empirical sociology. In Nigel G. Fielding, Ray M. Lee & Grant Blank (Eds.), *The Sage handbook of online research methods* (pp.506-519). London: Sage.

Jung, Jin-Kyu & Elwood, Sarah (2010). Extending the qualitative capabilities of GIS. *Transactions in GIS*, *14*(1), 63-87.

Knigge, Ladona & Cope, Meghan (2006). Grounded visualization: Integrating the analysis of qualitative and quantitative data through grounded theory and visualization. *Environment and Planning A*, *38*, 2021-37.

Knight, Dawn; Tennent, Paul; Adolphs, Svenja & Carter, Ronald (2010). Developing heterogeneous corpora using the Digital Replay System (DRS). *Proceedings of the 2010 Language Resources Evaluation Conference* (Workshop on Multimodal Corpora), May 17-23, Malta.

Liamputtong, Pranee (2010). *Performing qualitative cross-cultural research*. Cambridge: Cambridge University Press.

Morozov, Evgeny (2011). *The Net delusion: How not to liberate the world*. London: Allen Lane.

Nightingale, Andrea (2003). A feminist in the forest: Situated knowledges and mixing methods in natural resource management. *ACME: An International E-Journal for Critical Geographers*, *2*(1), 77-90.

O'Reilly, Karen (2005). *Ethnographic methods*. London: Routledge.

Peneff, Jean (1988). The observers observed: French survey researchers at work. *Social Problems*, *35*, 520-535.

Schreier, Margrit & Fielding, Nigel (Eds.) (2001). Qualitative and quantitative research: Agreements and disagreements. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *2*(1), http://www.qualitative-research.net/index.php/fqs/issue/view/26 [Accessed: April 15, 2012].

Valles, Miguel S.; Corti, Louise; Tamboukou, Maria & Baer, Alejandro (Eds.) (2011). Qualitative archives and biographical research methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *12*(3), http://www.qualitative-research.net/index.php/fqs/issue/view/38 [Accessed: April 15, 2012].

Author

Nigel FIELDING is Professor of Sociology and Associate Dean of Arts and Human Sciences at the University of Surrey. His research interests are in new technologies for social research, qualitative research methods, mixed method research design, and criminology. He has authored or edited 20 books, over 50 journal articles and over 200 other publications. In methodology these cover subjects including methodological integration, qualitative software, the role of computer technology in qualitative research, the research interview, and the application of high performance computing applications to qualitative methods.

Contact:

Nigel Fielding

Department of Sociology
University of Surrey
Guildford GU2 7XH
United Kingdom

E-mail: n.fielding@surrey.ac.uk

Citation

Fielding, Nigel G. (2012). The Diverse Worlds and Research Practices of Qualitative Software [50 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *13*(2), Art. 13,
http://nbn-resolving.de/urn:nbn:de:0114-fqs1202124.