End of Project Report: Plenty as a response to austerity?

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Objectives

The objectives of this research project were the following:

1. To investigate Big Data – and what it means - in the context of community and cultural spheres and in relation to forms of austerity that are tending to challenge the capacity of community organisations to undertake their work.
2. To investigate how Brighton's third sector is familiar and/or engages with Big Data, as a new development in digital media, and if so in what ways.
   To explore the felt need amongst individuals associated with these groups to explore the potential for utilising Big Data, and to identify obstacles in doing so.
3. To offer the opportunity to individuals from culture and community organisations in and around Brighton to build basic expertise in social analytics and data visualisation tools.

Introduction

This report presents an outline of the research activities and outputs, chiefly a series of workshops, undertaken and produced between May-September 2014 in the context of the research project "Plenty as a response to austerity" funded by the Communities and Culture Network Plus (CCN+) and supported by the School of Media, Film and Music, University of Sussex, UK. This pilot project critically explored the engagement of individuals engaged with community and culture organisations in Brighton with the concept of Big Data and explored the potential – and the

'potential to unlock the potential' - that Big Data of various forms may have for assisting these organisations in a period of austerity.

Research Contexts

Austerity measures are breaking links between communities, partly by straining cultural and community organizations, draining them of resources. At the same time 'digital' developments including data driven personalization may tend to atomize individuals from social groups of many kinds (elective, relating to social class, disability, generation etc.) very directly affected by austerity measures. In this climate finding ways in which communities can aggregate and gain access to means of expression, of organization, of activity, and of cultural production, including digital means, becomes more important than ever.

Coincident with austerity programmes responding to economic developments is a new series of developments in computing –marked by the growing importance of big data, rising use of social analytics by government and (to various degrees) local government as well as by industry. These trajectories are related (computational capitalism is one way to express this relation) but developments in each area are also somewhat discrete.

Data and data visualization techniques – often gathered together under the banner of 'Big Data' are powerful tools with which to make arguments, to see, understand, and communicate complex issues, to develop new lines of inquiry and to build new forms of creative and cultural practice – and yet many big data tools, theoretically free, and open to all to use, are not known of, or not understood, and their potential has largely not been explored by community and cultural organizations operating at local level, and operating in increasingly straitened circumstances. (Bassett, 2015) These organizations do not have expertise in new forms of social analytics, nor necessarily the means to obtain it – and the latter is a matter of desire as well as practicalities. This produces a series of disadvantages: notably (i), communicational asymmetry - small cultural and community organizations lack the register to 'speak back' or 'be heard' in an era of big data; (ii), these groups are not engaging with new means through which they might, in more compelling ways, communicate to their own constituencies – those they engage with, assist, service/help, or draw in as audiences; (iii), they lack the skills to deal with big data that comes to them; to parse it, make it comprehensible e.g. through visualization of various kinds – and to seek out relevant datasets in the furtherance of their goals.

The local contexts for research were Brighton, on the South Coast of the UK, and surrounding areas. Brighton is a city heavily invested in media arts and the creative industries, and well known as a digital media cluster with a vibrant digital media community (Zenerian, 2014; *Brighton Fuse*). At the same time it has been identified as a city marked by inequalities (Perrons, 2003). This is reflected in a vibrant community sector including local organizations addressing access to mental health services, education, homelessness, and domestic violence, among other issues, alongside branches of the usual national charities. This sector adapted rapidly to the advent of new media

technologies in the mid 1990s; Brighton is a community that has historically had a well-developed vibrant local support network to circulate shared and individual expertise in digital and internet technologies. An early actor was the Sussex Community Internet Project, and the SCIP list was and remains a central point of engagement for internet know-how (alongside its role as a hub for many forms of exchange and support) for many voluntary sector organizations (see Bassett, 2015:2). However it is less clear whether these organizations are adapting to or exploiting Big Data. The contrast between expertise in web development and other skills and the felt lack of expertise, and lack of a means to circulate expertise on big data and big data visualization, was one of our starting points. Another was the proliferation of web 2.0 and other platforms for new forms of collaboration (e.g. Meetup forums, where the exchange of expertise between professionals and other users is differently organized (although the individuals involved in each of these forums also overlapped).

Big Data is associated with what Obar (2013) calls the "sweeping digitisation of everyday life". It is seen as a process that involves the continuous creation of vast amounts of data on a big variety of social activity, accompanied by the capacity of these data to be analysed through the use of computational technologies (McAfee and Brynjolfsson, 2012). Here the term is taken to represent a new development in computing marked by the growth of the scale of data collecting, and data collections, new forms of organization, data operations, and access – and the plethora of ways in which this new development is framed, and discursively constructed. It is also a term that simultaneously points to these developments and to a new computational imaginary emerging through them - associated with solutionism, full automation, the automation of expertise (Bassett, Cruz, Thornham, 2015), and post-digital formations.

Research Objectives

The objectives of the research were to better understand this formation – summed up as a new abundance (of data) emerging in conditions of austerity – and to explore means of engaging with it in critical and constructive ways. We were explicitly concerned to explore the building of expertise in social analytics and data visualisation tools, and to understand and identify obstacles in the way of this process. Responding to this, our action research project:

- Critically explored the engagement of community and culture organisations in Brighton with the concept of Big Data and the potential that Big Data have for assisting these organisations in a period of austerity.
- Considered the possibilities for generating new forms of what Winifred Nowotny (2003) has termed 'socially distributed expertise', as a response to, and as a means of harnessing, Big Data.
- Set out to engender some familiarity and skill with big data through a series of discussion led and hands-on workshops.
- Engaged local communities with cross disciplinary research teams at the University of Sussex with a view to mutual informing.

Intellectual framings

This research was a follow on project for CCN+ horizon scoping on digital expertise (see e.g. Bassett, Fotopoulou and Howland, 2013). It sought to further explore some of the questions raised around digital expertise, this time in the specific context of big data. Moreover it sought to do so within the critical, participatory, and pragmatic (and thoroughly cross-disciplinary) approaches developed in earlier work. Within these horizons the key theoretical interventions were thus focused on defining digital innovation and transformation and exploring contexts and conditions of use in terms of contexts of material change and social power. This necessarily entailed engaging with on-going debates on the 'nature' of Big Data and on who can exploit them (Andrejevic, 2014; Tene and Polonetsky, 2012; boyd and Crawford, 2012; Neff, 2013; Davenport et al., 2012; Bassett and Fotopoulou 2015). Central to this we also explored models of technological expertise – both those focusing on social construction, and those considering an exchange of capacities (what we term the automation of expertise) - and this entailed engagement with work in STS by Collins and Evans (2002), Nowotny (2003) and others. We also built on work around local informal networks of digital media professionals in Brighton (Zenerian, 2014). Finally – we engaged with technical discourses of digital media through the use of big data analytic tools used as part of our workshop programming. Specifically this entailed engagement with natural language processing tools natural language processing tools for social analytics developed by the Text Analytics Group (TAG) at Sussex University, who were collaborators in this project.

Methodology

Our research objectives were pursued through a research pilot loosely designed as action research, often referred to as practitioner research, or practice-led or practice-based research intended to be reflexive and responsive which entails a blurring of the boundaries between researcher and research subject (McNiff, 2013, p.24). In our case participants and speakers in workshops, as well as interview participants in a framing study, were encouraged to share and reflect upon their respective forms of expertise and on their digital technology practices. Willingness to take on the needs of the subjects of research and respond to them iteratively was also part of this research.

The Project was inter-disciplinary. It was lead by Caroline Bassett, professor of digital media, and lead on the CCN+ expertise strand. Post-doctoral researcher Eleftherios Zenerian is a social scientist with expertise in work and sociality in the digital media industry. Professor David Weir, Jeremy Reffin, and Simon Wibberley brought in the Text Analytics Group, based in the School of Informatics and Engineering at the University of Sussex, and Carl Miller, from Demos, was a co-programmer for some of the workshops, and was engaged through the intersection between TAG and Demos via CASM (Centre for the Analysis of Social Media).

The core of the project entailed programmed big data workshops, commissioned jointly by the cross-disciplinary Sussex team of researchers, including members from the arts and humanities, media and digital studies, social sciences, and engineering and informatics. These were supplemented by a series of framing interviews conducted with four local community organisations.

A blog was produced both to generate interest around the workshops and capture activity and on-going interest. Workshop materials were archived and made available to the public via the blog.

Framing Interviews

Interviews were conducted with groups representing different facets of Brighton's community sector. One of those organisations was the grass-roots group *Queers Against Cuts*, mobilising around identity politics, others were *Assert*, supporting adult with Asperger Syndrome and High Functioning Autism, *Creative Future*, providing arts training and mentoring to socially disadvantaged people, and *Healthwatch*, around access to local health and social care services. Prospective interviewees were identified and conducted through the SCIP mailing list and the website of Community Base, one of Brighton's community sector "hubs". Community base is a charitable organisation established in 1996 with the aim of accommodating community organisations in Brighton.

All interview participants stressed the impact of austerity measures on the finances of their organisations. One of the organisations working with marginalised people, told us that the number of people who turn to them has been doubling year on year and attributed this to austerity measures and cuts in important public services. Austerity measures impose other burdens to community organisations such as the requirement for constant fund-raising in an environment where there is perceived to be "a lot less funding" available, and "much more competition for it".

All the organizations rely heavily on volunteers. Partly for this reason an issue that we early on expected to be highly relevant to big data access was the issue of digital expertise, namely the ability to understand and engage meaningfully with digital technologies. The ability of people to access and use Big Data has been addressed by commentators including Anderson and Rainie (2012) and Andrejevic (2012). Others including those associated with the CCN+ programme have explored use in terms of expertise, where the latter is understood as a complex formation which may take different forms (for instance it may be directly held, may be circulatory, passive or active, recognized or unofficial), and which is at once an embodied skill and a form of cultural capital. Our hypothesis - that communities might be lacking the expertise to take advantage of Big Data – is thus more complicated than one that simply discusses the need to 'catch up' on new digital skills.

All participants in our interviews initially described themselves as digitally literate. For most of them, engagement with digital technologies is part of their everyday lives. Use of social media such as Facebook, LinkedIn, and Twitter was a common practice, for some more than others. However, although digital technologies are part of their *habitus*, they use them selectively in their work. A conventional engagement with social media existed, although was often seen as an added weight to the functions of the organisation. In the case of an organisation that had a relatively well-developed social media strategy (Twitter, Facebook, Linked In, the organisation's own website, and a Tate Modern events account) the limitations associated with funds was acknowledged. In another case having a digital strategy was seen to have a relatively low priority amongst the countless

responsibilities the community workers responsible took on.

Discussing Big Data, rather than digital literacy and digital use 'in general', produced a somewhat different take on expertise – and amplified the concerns around resource limitations in times of austerity. Some participants felt that Big Data could only be taken advantage of by people who are experts with computing/social media. Since small community organisations lacked those digital experts – and had few resources to find them - some participants were markedly sceptical about the potential of Big Data for their organization. Overall, Big Data (including the datasets captured through social media activities) and social media (as a site for activities and forms of promotion) were viewed as rather discrete and were differently prioritised by community organisations. This division and prioritization appeared to be both a matter of desire and intent, and a matter of resources or the lack of them – where the lack concerned amongst other things, a lack of access to expertise.

The Workshop programme

Three workshops – with lectures, feedback, associated discussion sessions, plenaries and round tables, hands-on work in lab sessions and informal discussions – were programmed. They were held between June and September 2014 (3rd of June,15th of July, and 25th of September). The intention of the workshops, was, in each case, to assess interest, assess how interest could be produced, to connect with 'local' experts and interested organizations, and to give people involved a chance to build expertise in big data – however that expertise was framed (as practical skills, as capacity to understand better the claims of Big Data, as understanding of how Big Data sets might be used in local and community concepts).

The first of involved discussion of concepts - 'what is Big Data', the second explored 'how to do Big Data', and the third sought to ask how Big Data methods might be adopted by local activists engaged in responding to plans by industry to frack in their area. The workshops were designed to enable participants to explore big data, how it can be understood in social and technical terms, how it might be used and what the issues around it might be. We sought to generate a more informed sense of 'what big data is' by designing workshops involving practical hands on sessions. A key tool employed at the workshops was the TAG-designed and developed scraping tool 'Method 51', a data analytics tool designed to understand and undertake social media analysis, used to introduce big data possibilities in a practical way to those engaging with the project.

All three workshops took place in the University of Sussex, variously in seminar spaces and informatics labs, and in public spaces. Participants included individuals from Brighton's community sector, digital media practitioners, data journalists, academics engaged with digital media, digital health, informatics and NLP, media artists, and others. Across the three workshops around 80 people engaged with the project. There was support for those who needed transport assistance from the centre of Brighton.

Two of the workshops, addressing these issues in an over-arching way were very successful and full to capacity. The third was smaller, and suffered from taking as its subject not 'big data' 'itself' but by seeking to explore big data in relation to specific subject of public interest – that of potential fracking around the local area of Brighton. In all of the workshops we were interested in understanding how local communities felt about the need for familiarization with Big Data, the potential for utilising Big Data, and how they identified obstacles to gaining expertise and to using Big Data resources in their activities. In addition, in this avowedly action oriented project, we sought to help our participants gain their own insights into 'what big data is', what is new about it and what old – what 'sits behind the label' – and what they might do with it. We also wished to discuss with them the stakes not only of capture and various modes of analysis, but also to explore the basics of data visualization and the epistemological claims it makes (to be 'the truth' for instance rather than to be also a representation entailing an appeal to aesthetic values). Finally we set out to initiate users in 'doing big data research' through a bespoke training workshop developed using TAG technology.

Workshop 1: ***Big Data – What's in it for communities?***

The workshop series started with an event that asked what Big Data is, how community groups can gain access to big data sets, what kinds of skills and expertise are needed to deal with big data and to use big data and data visualization techniques, and what the barriers to access big data are. This workshop scoped out some of these issues through a series of semi formal and informal sessions exploring definitions, tools, and providing examples of various kinds of data-mining and data visualization techniques to inform discussions.

The event was advertised on SCIP's community mailing list, through invitations sent individually to organisations with which the researchers were in contact, and via various university mailing lists. More than 40 people attended the workshop, either as speakers or participants. Around half were professional digital media practitioners and/or members of local community and commercial organisations - including Data Visualisation Brighton, the Brighton and Hove independent, Cataspandglish, and Sussex Interpreting Services. Other attendees came from universities around the UK, including Canterbury, Leeds, Imperial, Brighton, Sussex, and the Open University, from a variety of specialisms, including business studies, cultural studies, and informatics; this level of participation from academics was itself surprising given that the event was billed as an introduction. It transpired that a number of these academics also have links with various community and voluntary organizations. CCN+ members involved in earlier horizon scanning studies also attended.

The workshop discussions aimed at elucidating the different dimensions of the phenomenon under investigation – chiefly to engender some understanding of technical issues and to thereby generate further insight into social questions arising. A cultural/sociological analysis (Eleftherios Zenerian considered Big Data as a cultural phenomenon asked how it can be powerful), was thus followed by a more instrumental session covering the identification and classification of different types of data –e.g. social media data, community information, and central government data. The speaker,

(Jeremy Reffin, Informatics/Sussex) also explored big data in terms of "subject matter" and in relation to the distance instantiated by codification which may mean datasets lose their social character.

The practicalities of managing big data were the subject of the following session. This explored the different methods for the analysis of big data sets, such as the application of automatic algorithms and looked at these in relation to more qualitative methods in order to open discussion into their benefits and shortcomings. The designer was Simon Wibberley (Informatics/Sussex), the co-author of the NLP-based text analytics tool designed for Twitter analysis, used by the project, who then presented the tool as an example of how this kind of work can be done. This session was produced in collaboration with Demos' Carl Miller (CASM/Demos), who demonstrated how different types of questions around social phenomena that can be answered with the information available in big datasets.

The penultimate session also drew on non-academic and academic speakers. Peter Cook, a data visualisation expert freelancer in Brighton, demonstrated different data visualisation tools and described data visualisation in terms of exploration, analysis, insight, informing and story-telling. Andrew Duff (MFM/Sussex) talked about data visualisation tools and big data in university teaching practices and in relation to learning and pedagogy, and as part of this presented several content management tools and databases that are freely available, and talked about problems associated with access and analysis. The workshop closed with a round-table discussion on the democratic potential of Big Data and its usefulness for the community sector. Panel participants included Carl Miller (CASM/Demos), Aristea Fotopoulou (MFM/Sussex), Greg Hadfield (Brighton and Hove *Independent*), and others – but the debate was general including many of the session attendees.

Workshop 2: *Big Data Taster! Using Big Data for Cultures and Communities*

The second workshop was designed to shift the focus from informing through discussion to informing through practice and focussed on introducing participants to practical skills in using big data sets for analysis. It was organised into two sessions. The first returned to some of the framing discussions that took place in the previous workshop and expanded them, while the second longer session moved to a lab and so that participants could learn how to use a tool for the analysis of Twitter data and could experiment with their own pilot searches. Publicity emphasized that special computer skills were not necessary to come along and participate and invited attendees to bring along their own ideas of what big datasets might be of interest to them.

This workshop was fully booked with around 30 participants - around 60 per cent of whom had not attended the first workshop. Once again attendees included members of Brighton's community sector this time with a pronounced bias towards creative organizations (e.g. individuals from Fabrica, Creative Future, Regency Town House attended). There were also and academics from a variety of disciplines including cultural studies, physics, informatics, mathematics, and business studies. There were once again individuals who bridged these divisions.

Many of the introductions given in the first workshop were recapitulated – albeit more briefly – in the second in order to introduce new participants to the basic concepts and reflections. But two new areas were opened up through discussions on how contemporary social and political debates develop on social media such as Twitter (led by Carl Miller of Demos), and in a session on datasets and tools for the analysis and visual representation of data that are freely available on the Internet. They key focus however in this second workshop was the 'hands on' session. This took place in a computer lab. It was designed around Method51, a big data tool designed to mine information from social data sets (Wibberley, Weir, Reffin (2014), and users were led by Simon Wibberley, a co-designer.

A key feature of Method51 – and a reason to select it for our workshops – was that it is enables the development of one off classification 'pipelines' (Kober, Weir, 2015) which can be tailored to the analysis of datasets of interest – social issues that have triggered high levels of activity on social media (twitter incidents or twittcidents), which may well also be highly polarized (responses to social events that are responded to differently by different social groups for instance). This provides means through which the user or analyst can gain a sense of the contours of the discourse under investigation is (the range of topics, possible discursive themes) and can adapt and adopt their inquiries – and teach the software to operate more efficiently. This also meant that questions of machine versus human activity, the degree to which the need for user-defined classification work was involved for instance, became highly visible to our participants. They discussed this in terms of a balance between relative and specific expertise (their own expertise in their specialist professional fields, and that of 'the machine' or 'the code').

Workshop participants were guided through the process of defining a research area of interest, speculatively exploring the dataset, refining questions, and training the tool to identify relevant data, mark it and track it. Many participants successfully grasped the main features of Method51, and did design and launch analysis of available downloaded data relevant to their own preoccupations. However many also had problems successfully conducting their searches. This was partly due to the necessarily limited time frame for initial classification work but other issues arose more directly concerned with issues of expertise and its translations. Method51 presupposes at least three types of knowledge from users. These include familiarity with its main features and ability to learn the procedure (e.g. knowing which steps to follow in order to conduct a search) – and here users were helped by the workshop leaders. Other forms of knowledge required include an understanding of classificatory thinking and the ability to use it identify "themes" (e.g. being able to "code" data into categories, being able to determine if a mention is "positive", "negative" or "neutral", and so forth), and along with that a basic understanding of what it means to look for patterns in data (for a sociologist some of these tasks would entail perceiving a population, thinking about subsets of data, seeking correlations, statistical significance, and so forth). Some of the participants didn't have these understandings. Other participants familiarised themselves with the procedure relatively quickly, and gained a good general grasp of what it entailed, but faced difficulties making sense of what the data told them. Feedback from the workshop session, largely gauged through informal discussions during the workship itself, was largely positive. Moreover it did appear to produce new

perspectives on the working and possibilities of this kind of analysis – and also a strong sense of the degree to which the data is not offering entirely automated, or 'neutral' solutions. Many workshop participants were surprised by the degree to which their own intervention was required in what they had presumed was an entirely 'automatic' process.

Workshop 3: ***Big Data Taster 2 - Big data and the anti-fracking campaign***

The final workshop was organised around a case study that looked at the potential of Big Data and Big Data resources for cultures and communities in relation to fracking, partly in response to local campaigns and community mobilizations around fracking in the South East of England. The object was to work from another direction – seeking groups organized around a specific 'end' and asking what they might need to gain access to big data and big data expertise and how they might engage with it. Specifically we targeted communities in the South-East of England that organise around the issue of fracking – at the time a live debate in the region. Three anti-fracking organisations were approached. One of these organisations, Brighton and Hove Friends of the Earth (BHFE), invited us to one of their meetings to talk about our project. The other two organisations, Brighton Action Against Fracking and Frack Free Sussex, were unresponsive and the BHFE did not manage to be represented in the workshop either. However we continued to seek engaged participants and the final workshop attracted thirteen participants in the end, and although fewer than had been hoped were from local cultural organisations[1] those present constituted a good cross section of academic and non-academic interests.

The workshop preparation included big data searches and the sessions themselves included a discussion on the preliminary findings of the project, an evaluation of Big Data as possible tools for community empowerment, a presentation of the anti-fracking campaign, and an investigation of data around fracking on Twitter and data visualization tools that might be used to express some of this data. The workshop thus included a show and tell of how data on fracking and responses to fracking had been collected and analysed using Method 51, an explanation of themes emerging through the analysis, and a discussion of possible modes of visual representation of these themes. Jeremy Reffin, of TAG, explored the formation of anti-fracking communities as data-driven communities. Carl Miller (Demos) made the case that big data can empower communities, which led to an open discussion with workshop participants including fierce debate on the forms of knowledge generated, not only through big data, but through big data and/as media analysis. This workshop was also a forum for shared reflection on the project as a whole. As part of this process preliminary findings based on interview and previous workshop data were thus introduced by project researcher Zenerian, leading to an open discussion not only of how big data expertise might be more widely generated in communities and cultures, but of what expertise consists of.

1 Participants included: Carl Miller, Simon Wibberley, Jeremy Reffin, Eleftherios Zenerian, Lee Salter, Aris Mousoutzanis, Phil Blume, Mary Agnes Krell, David Hendy, Gemma Farrell , So Hyung Kim, John Hondros, Gemma Cobb.

In conclusion

The workshop programme at the heart of this research project was successful in engaging a wide range of individuals engaged in local community and cultural organizations – who did state that, having attending the workshops, they felt more confident in addressing and understanding the issues arising around Big Data. Those we worked with had a clear sense of division between digital media as a means through which they expressed their messages and articulated their work, and the data they amongst others generated as Big Data, and might exploit. They were curious to see how they might set about using Big Data, and did express a sense of achievement in having managed to 'make the data work for them' using the TAG tools. This sense of achievement – which might also incite desire to do more with Big Data and to engage with its potential more fully – was tempered by a recognition that in most cases what they 'got from the data' was found to be slightly disappointing. Some saw this as a failure of expertise on their part. Others as a failure of 'the computer' to do what was expected.

Three issues here are briefly raised here as a conclusion and as a provocation. First, the workshop programme was successful in generating confidence in thinking through issues arising around Big Data for participants. It was also a productive networking series of events for those involved. Second, it confirmed that there are complex sets of barriers to engagement with new forms of computation, particularly with new forms of computation whose operations are increasingly inaccessible. These barriers concern human expertise (and the lack of specific technical expertise) and raise questions of how to access this expertise. However they are also in some sense more fundamental – concerning the automation of various forms of expertise tout court (so that they are not the property of technical people, or other groups, but of machines) – and how to respond to this. Third, we are interested in the degree to which some of those who participated in our discussions and workshops were both alarmed by the 'power' of Big Data as they encountered it 'in theory' *and* somewhat disappointed in 'what it could not do' when they used it in practice. This tension, between how Big Data is imagined and how it can be used, isn't simple to resolve; there remain underlying questions about human and computer interaction in an era beyond transparent interaction that simple competency cannot resolve. Our 'learning' from these workshops is not to underestimate the diversity of the human side of this interaction.

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