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‘Clearly necessary’, ‘wonderful’ and ‘engrossing’? Mass Observation correspondents discuss forensic technologies

Introduction

Described as a ‘contemporary soul, the site of identity and self’ (Nelkin and Lindee 1995:49), DNA has gradually achieved over the last few decades a mythical meaning in popular culture and the collective imagination (Keller 2000). Likewise, while a ‘molecular vision of life’ (Rose 2013:5) supported by genetic techniques has helped shape individual understandings of health, illness and treatment, the introduction and use of forensic DNA technologies in the prosecution of suspects and the monitoring of detainees through national DNA databases illustrate another facet of the ways in which an increasingly somatic notion of personhood has come to operate at a political level (Novas and Rose 2000; Rose 2013).

If criminal justice has been the most common and enduring theme of popular entertainment since the 1970s (Kaminer 1995; Surette 2007), the introduction of forensic DNA techniques and their portrayal in series such as *CSI: Crime Scene Investigation* have been said to familiarise the public with such techniques (Innes 1999; Reiner 1997) and crystallise the portrayal of DNA profiling as central to police work (Allen 2007; Cavender and Deutsch 2007; Huey 2010) and infallible in character (e.g. Cole and Lynch 2006; Lynch et al. 2008; Kruse 2010; Manning 2008; Williams 2008). Equally, at a political level, the governance of genes, genetics and DNA and their use in crime investigation has been part of a complex framework of stakeholders’ interests that has generated extensive academic debate about the scientific, judicial and ethical issues raised in the development and the public understanding of new technologies (e.g. Allen and Redmayne 1997; Edmond 2000; Hindmarsh and Prainsack 2010; Jasanoff 1998; Lynch and McNally 2003; Rothstein and Talbott 2006; Tracy and Morgan 2000; Van Camp and Dierickx 2007; Williams and Johnson 2004, 2005, 2008).

Outside White Papers, policy guidelines and targeted consultations, most research on the role and place of forensic DNA technologies in criminal investigations focuses either on specific aspects of the

judicial process or on the impact of media representations of DNA and crime investigation on various groups. Topical analyses have revealed how DNA is understood to provide absolute truths in the offender community (Machado and Prainsack 2012; Prainsack and Kitzberger 2009; Stackhouse *et al.* 2010), amongst jurors (Ghoshray 2006; Schweitzer and Saks 2007; Tyler 2006) and legal professionals (Dahl 2010). Such an understanding is reinforced through media representations of DNA and its place in solving 'real' and 'fictional' crime in TV programmes (Brewer and Ley 2010; Ley *et al.* 2010; Kruse 2010) and printed matter (Machado and Santos 2009). To date however, analyses on how lay publics perceive crime investigation and the application of forensic technologies - including DNA profiling - in police work and outside it, have been scarce (Curtis 2009).

Based on Williams' concept of the 'forensic imaginary', i.e. 'the actual or promised ability increasingly to recover individualisable traces of biological and other materials transferred between persons and objects at crime scenes and to use these traces as evidence to support criminal prosecution' (2010:135), this article seeks to illuminate the meanings and place Mass Observation (MO) correspondents accord to crime investigation and the application of forensic DNA technologies therein. Using the replies to two independently commissioned Directives (the 2006 Spring Directive, Part 1 'Genes, Genetics and Cloning' and the 2011 Autumn/Winter Directive, Part 1, 'Crime and Investigation'), the article examines the ways in which the correspondents (collectively referred to as the Panel) discuss DNA and genetics in relation to surveillance and law and order. The analysis considers prevailing understandings of the relationship between forensic DNA technologies and policing and identifies how individual panelists interpret, engage with and discuss their writing tasks. It is argued that MO data offer significant insights into how information on a range of topics is selected, appropriated and incorporated into distinct worldviews. These accounts constitute a rich, yet under-explored resource for (1) documenting the range of resources that inform the correspondents' forensic imaginaries and legitimize their interest in or disregard for criminal investigation and genetic technologies and (2) helping to conceptualize the ways in which distinct lay publics reflect upon representations of investigative practice. While the analysis highlights the benefits and limitations of an MO approach to documenting collective views on law and order, crime investigation and the role of forensic technologies in this process, the conclusion reflects more broadly on both the contribution such an approach could make to the literature on public understanding of science and the uses and potential of Mass Observation data for social science researchers.

Background

To date, the ways in which specific collectives make sense of DNA technologies and their place in relation to law and order have been discussed in writing on the public understanding of science, studies on media representations of DNA and crime investigation and research unpacking the complex relationship between public trust, authority and police legitimation. Despite distinct conceptual angles, these three bodies of literature share an aggregate, quantitative approach in their attempt to address how non-specialist audiences relate to new technologies, their governance and role in policing.

In recent years, the public understanding of science literature has made a conceptual transition from the 'deficit model' (i.e. the belief that a more knowledgeable public would have a greater

appreciation of science) to one where a two-way dialogue between scientists and policy makers on the one hand, and lay members of the public on the other, is sought to inform the decision-making process surrounding the development of new technologies, thus offering a more deliberative approach to public consultations (Michael 1998; Michael and Brown 2005; Wynne 1991). While in order to close the assumed 'communication gap' between the public and science, the deficit model has assumed a passive public in need of education, the approach adopted in the 'interactive science' model has advanced a less static understanding of the rapport between citizens and science (Wynne 1991). With public participation seen as key in restoring expert trust and the acceptance of new technologies (Gibbons 1999), this 'interactive science' model seeks to open up policy-informing discussions on scientific and technological issues relevant to all and to capture a wider range of opinions from a more diverse audience (Anderson et al 2011; Collins and Evans 2003).

In the case of forensic DNA technologies, the relationship between science and the public is further complicated by the ways in which their end-users have come to be perceived and the widespread brittleness of public confidence in the police (Reiner 1992). Not only do the debates on the introduction and governance of forensic DNA technologies reflect the anxieties surrounding panoptical apparatuses and the low trust conveyed by related institutions (Chan 1996, Dahl and Sætnan 2009, Lyon 2002), but also the complex connection between surveillance, police, the state and DNA technologies has led to views that surveillance creep 'has deflected the possibilities of error through faith in science and the promise of genetics' (Nelkin and Andrews 2002:108). Simultaneously, reliance on technology as portrayed in the media has helped shape public confidence in the role of DNA in aiding criminal investigation. Studies on media use and attitudes to science have repeatedly highlighted the role of television, news and printed press as key in perpetuating the promise of genetics (Brewer and Ley 2010; Cavender and Deutsch 2007; Ley et al. 2010; Machando and Santos 2011) and instrumental to the CSI effect, i.e. the expectations surrounding genetic evidence collected at a crime scene and its success in securing convictions (Cole and Dioso-Villa 2006; Kruse 2010; Tyler 2006).

In public engagement terms, perceptions and expectations of the forensic use of DNA have been examined in relation to the collection and storage of DNA samples, the DNA potential for deception in police investigations, violation of privacy and personal freedom, and genetic discrimination (Curtis 2009). Some of the issues related to the governance of genetic resources, such as DNA databasing and the forensic use of genetics for instance, have received wider coverage in England and Wales where two public consultations tried to gauge opinions on these matters. While calling for increased transparency in the ownership and governance of the national DNA database, jury guidance on scientific evidence and better public education, both *The Wales Gene Park and Techniquest* public discussion in 2007 and *The Human Genetics Commission Citizens' Inquiry on the forensic use of genetics* carried out in 2008¹ reveal contrasting pictures on the extent to which individuals embrace the idea of a universal DNA database (Anderson et al. 2011; Stackhouse et al. 2010).

Discrepancies in the ways in which DNA is perceived have also been noted in relation to members of organisations involved in using DNA profiling or commenting on its use in the criminal justice system.

¹ Human Genetics Commission, 2008. *A citizens' inquiry into the forensic use of DNA and the National DNA Database: Citizens' report*. London: HGC. Available from: <http://www.hgc.gov.uk/UploadDocs/DocPub/Document/Citizens%20Inquiry%20-%20Citizens%20Report.pdf> [Accessed 10 February 2011].

Tracing the representations of DNA in ethical disputes about forensic databases between forensic scientists, crime scene examiners, legislators, human rights activists and the police, Williams and Johnson (2004) remark on the dichotomous approach to understanding DNA profiling, more specifically the tension between 'a wonderment of the ability of DNA to identify the perpetrators of crime and a dread about its capacities to erode civil liberties and human rights' (2004: 208). Their findings show that concerns about human rights overlap in a seemingly unproblematic way with the acceptance of the scientific authority of molecular biology and the incorporation of DNA profiling in the prosecution and sentencing of suspects. At the other end of the spectrum, a comparative study of Austrian and Portuguese prisoners to gauge their understanding of forensic technology (Machado and Prainsack 2012) illustrates how DNA evidence is believed to be superior to all other types of trace and highlights prisoners' view that the process through which DNA matches are obtained is error proof and can secure convictions on its basis alone. More generally, lay opinions on the power and effectiveness of DNA profiling and its use in criminal investigation have been shown to depend on the silver bullet portrayal of this technology in the media.

Extant analyses on lay and specialist collective understandings of DNA technologies led to authors highlight both the methodological problems raised by large national surveys in terms of ensuring an appropriate representation of the general population, and the often contradictory responses received in relation to this topic (Anderson et al. 2011; Stackhouse *et al.* 2010). More often than not the inclusion of qualitative material to elucidate and strengthen the reliability of data through triangulation is missing (Curtis 2009; Michael 1998; Michael and Brown 2005; Wynne 1991). It is in response to the scarcity of 'thick' (Geertz 1973) lay descriptions that this article seeks to make a contribution. The exploratory discussion below is by no means comprehensive: it does not provide a breakdown demographic analysis of MO correspondents or a detailed examination of responses in relation to each theme. Selective in its character, its purpose is to illustrate what can be gauged through an understanding of collective meanings surrounding DNA techniques in police investigation outside targeted consultations, the place these technologies hold in public imagination and in relation to everyday experiences of and opinions on law and order.

The Directives

Described as a 'combined people's ethnography, collective auto/biography, and social commentary' (Bloome et al 1993; Sheridan 1993), Mass Observation (MO) has become a unique way of capturing everyday life in Britain and offers a rich corpus of data on the correspondents' beliefs and experience (Sheridan et al. 2000; Stanley 1995).² Whereas in its initial phase MO employed directives (questions on specific themes), day and longer diaries in conjunction with surveys, observations and questionnaires in order to collect information about everyday life, for the last 22 years only detailed replies to directives have been used.

Every four months correspondents receive a Directive which contains up to three themes, divided into sections, to which they are usually expected to reply within 12 weeks. Most themes relate to personal experience and opinions on subjects such as health, old age, the NHS, shopping or education, on occasions asking for specific one-day diaries or a more continuous record (for example, monitoring reactions to media coverage of the Gulf War). Based on ideas and suggestions from Archive staff, visiting researchers, and correspondents themselves, most directives are designed in-house. Some, such as those discussed below, are commissioned by external researchers and the design then becomes a collaborative effort between the director of the MO Archive and the commissioning researchers. Whereas in the 1980s and 1990s, response rate could reach as much as 60-75% for a 500 members strong Panel (Bloome et al 1993), in recent years the highest rate recorded was 61% (for the Winter 2009 Directive 'Books and You'). One of the lowest rates (32%) was registered for replies to the Summer 2009 Directive on Swine flu. Oscillation in response rates may be attributed to both the composition of the Panel and the subject matters of different directives, with those concerning more closely the everyday lives and routines of the MO correspondents scoring on average higher than those soliciting opinions on more specialised themes³.

Subject to a review undertaken in October 2011, the Panel composition changed to 472 writers, of which 41% male and 59% female. Statistical data collected shows that more women than men are MO writers, which may reflect a concerted effort to document women's voices and experiences (Sheridan 1993). The occupational composition of the Panel in both of the Directives discussed below was comparable to that observed by similar studies based on correspondents' replies to MO Directives, with civil servants, administrators, managers, librarians and teachers as typical career choices for both male and female respondents. Likewise, the largest age group writing was, for men, between 70 and 79 years, and for women between 60 and 69 years (Smart 2009a). With predominantly middle-class retired professionals, MO correspondents make for a 'skewed sample in terms of social class' (Smart 2009a:556) that is not statistically representative of British society. Yet, this caveat has opened-up other opportunities for different types of analysis (Hubble 2006; Sheridan 1993; Smart 2011) - in the current case the possibility of gaining a more detailed understanding of how individual citizens, rather than targeted, specific groups (i.e. offenders, jurors, young black men, etc.) think about crime, forensic technologies and policing. Presently, roughly half of the correspondents for the Autumn/Winter Directive 2011, part 1, also wrote for the Spring 2006

³ The first Directive on which this article draws - the Spring 2006 Directive (no.77), was sent to 522 correspondents. Two of its three parts (Genes, Genetics and Cloning and Public Mourning) were externally commissioned and the third part was a one day diary. Part 1 had a response rate of 39% (204 replies), while the second and third had marginally higher responses: 41% for Part 2 on public mourning (216 replies) and 40% for Part 3 (211 replies), figures typical for 2006 and 2007 (see MO Annual Activity Report 28). 73 out of the 204 responses received for Part 1 did not discuss forensic testing and criminal investigation. The remaining 131 replies while addressing the topic, connected it largely to other aspects, such as health, which arguably reflects both the preoccupations of an ageing Panel (Wilson-Kovacs et al. 2012) and the broader remit of the Directive itself. The second Directive - the Autumn/Winter 2011 Directive (no. 93) - was sent to 419 correspondents. The first of its three parts focused on Crime and Investigation and was externally commissioned, while the other two were internally devised themes. The response rates were 48% for the first part (204 replies), 46% for the second part titled Civil Disobedience (193 replies) and 47% for the third on 'You and the 1980s' (198 replies). The 48% response rate in Part One was one of the highest for any of the 2011-2012 Directives (see MO Annual Activity Report 34).

Directive, Part 1 on Genes, Genetics and Cloning (98 correspondents), which provides an opportunity to trace and compare individual opinions over a period of time.

If the MO data may be regarded as 'messy' by contemporary research standards (Law 2004) and the narrative based, flexible way in which writers approach their tasks as not sufficiently rigorous for quantitative sociological analysis (Hubble, 2006, Sheridan 2000), the wealth and depth of information provided by the replies constitute an archive of everyday life and a richly textured resource to complement other forms of data used to inform topical extant debates. The fact that 'Mass Observers would only write about the things they felt (relatively) comfortable revealing or indeed things they knew (or had found out) about' (Smart 2009a: 557) opens up access to lengthy accounts on matters close to the heart of the correspondents. The way in which directives are usually designed and structured allows for a range of subjects to be surveyed. This house-style, to which all externally commissioned directives are advised to adhere to, ensures that rather than focusing on a limited number of (occasionally specialist) topics approached in a similar way, there are several modalities to channel the interests and writing capabilities of the Panel. For instance, the Spring 2006 Mass Observation Directive (No. 77) Part 1 'Genes, Genetics and Cloning' asks the Panel for their (1) thoughts on and personal experiences of DNA-related testing for paternity, inherited conditions, forensics and criminal investigations, and the use of genetics for other research purposes, (2) sources of information on these issues, (3) reflection on media coverage (through books, films, artwork, news and television programs), (4) views on the regulation of scientific research and its impact on everyday life and (5) opinions on the most important aspects of human genetics and cloning. Similarly, the Autumn/Winter 2011 Mass Observation Directive (No. 93) Part 1 Crime & Investigation starts by asking about (1) sources of information regarding 'real' and 'fictional' crime and (2) personal experiences of crime before soliciting the Panel's opinions on (3) the use of forensic technologies in policing and the place of DNA in crime investigation, (4) the future of criminal investigation and (5) the nature of criminal behaviour. Additionally, Part 1 concludes with a continuous diary task which invites MO correspondents to document and reflect upon all references to DNA and crime investigation they encounter during a week of their choosing (a point to which we return shortly).

The ways in which MO Directives are formulated typically invite a broad sweep of opinions on a number of related matters, which can be presented in a structured way (and indeed most panellists attempt to organise their accounts so that they clearly address each question) or a more selective manner, where one of the questions is elaborated upon in greater depth. The Panel's testimonies highlight different ways of participation and approaching the task of being an MO correspondent. While this may be perceived as undermining a methodical approach to data collection, it equally empowers panelists to document and reflect upon experiences in ways that traditional methods of data collection would not permit. It is however the researcher's task to acknowledge and make sense of these accounts within the context of their individual production, as well as the wider socio-cultural context which they refer to and into which they are generated. Equally, a researcher's awareness of their own views, knowledge and bias in the description and interpretation of data is needed. Distinct approaches to interpreting the MO data have been identified: one can regard the accounts as simply conveying information, revealing bias and lacunae, or as providing a situated, reflexive account where everyday life and the panellists' experience are central to the ways in which knowledge is conveyed (Bloome et al. 1993). In the following discussion an understanding of the latter has informed the analysis, with reading and writing understood as social and cultural practices

and shared ways of social engagement that produce and promote particular social identities. The analysis itself has followed the sampling strategy used by Savage (2007, 2010) in his study of MO and social class and is based on the theoretical sampling model advanced by Glaser and Strauss (1968).

Given the large number of responses from the two different Directives combined, the amount of topics and issues covered by most of responses and the length of some of the accounts, theoretical sampling was both advisable and the most manageable way in which to present the Panel's replies. Methodologically, the analysis has also relied on a variant of the tracking discourse technique (van Dijk 1988), a qualitative document-analysis approach which follows specific topics and themes over a period of time and the emergence of themes and meanings across correspondents' accounts, critically comparing the use of terms between replies before theoretical sampling.

Noting the difficulties raised by the methodological handling of MO data, particularly in carrying out secondary data analysis where the initial data collection does not coincide with the subsequent analysis questions (Heaton 2004; Nettleton and Uprichard 2011) and considering the breadth and scope of the two Directives, the following discussion will focus primarily on the replies to the second Directive while drawing supporting evidence from the first. With a thematic focus on the correspondents' perceptions of forensic DNA techniques in relation to crime and investigation, surveillance and law and order, the sections below will introduce the contexts in which information and knowledge is obtained and discussed, views on DNA fingerprinting in relation to other approaches to crime investigation, and the ways in which MO correspondents approached the task. It is hoped that these three different angles will help highlight the advantages of an MO approach to providing a complex and nuanced collective understanding of the role of forensic DNA technologies in police work and their place in an arsenal of crime investigation tools.

DNA as 'absolute truth'

Confirming the typical knowledge acquisition channels (Curtis 2009; Ericson and Shearing 1986) the correspondents' information on DNA and crime investigation is derived mainly from coverage provided by the media in relation to both 'real' and 'fictional' crime. With the exception of those who identify themselves as police officers, magistrates or as required to undertake jury duty, most of the Panel have little direct experience of DNA profiling or crime investigation. Local as well as national news are closely followed, with most correspondents paying more attention to local crime as a way of keeping up-to-date with their community. At the time of the Autumn/Winter 2011 Directive, most contributors remarked on the merits of the new DNA evidence obtained in the Stephen Lawrence case and the successful prosecution of one of his attackers. Equally, the usefulness of DNA evidence is noted in addressing miscarriages of justice. Perceptions of crime as escalating are common, and oversaturation of information is offered as an explanation for disengagement: 'there is so much crime now that I'm beginning to find my mind glosses over it' (R1025, 68, housewife, formerly book-keeper). With a confessed interest in 'real' crime largely concerning procedural justice, rather than a sensationalist angle, few of the correspondents see crime news coverage as 'depressing', 'distasteful' or 'abhorrent'. In contrast, fictional accounts of crime investigation are lengthily appraised by most writers. It is mostly the satisfaction of working out the puzzle that most panellists confess to in relation to crime fiction:

I enjoy them because they are "problem solving". I like "who Dun Its" for the same reason, I like to be able to solve the problem, can I work out who is guilty. (D156, 59, married female, florist)

Representational credibility is woven into accounts of reading and watching preferences, with patterns of popularity clearly traceable. The occasional lack of interest is also declared: 'the perpetration, investigation and solution of fictional crime has no appeal to me whatsoever' (C3603, 68, married male, Retired Youth & Community Officer).

Getting down to the essence of watching or reading about crime, part of the joy in it is imagining yourself living a life with no strictures, completely free. This is the genius of a show like 'Breaking Bad', which is truly about crime in a way that conventional "crime drama" could never be. (W4467, 37, male, screenwriter)

Yet, DNA as entertainment can be seen as having a limited value, despite the 'glamorisation of forensic work' and 'futuristic tests' in series such as *CSI*, *NCIS* and *Bones* or the popularisation of DNA testing through the *Jeremy Kyle Show's* sensationalist focus on paternity legal battles. Regardless, the 'forensic imaginary' (Williams 2010) is present in relation to both news items and fictional portrayals of crime. DNA is routinely referred to as a 'revolution in forensics and police investigations' and 'the new concluding evidence that gives weight to evidence'. Not only is DNA testing seen as confirming the identity of 'real' or 'genuine' criminal offenders, but its reliability is undoubted. Furthermore, other forms of identification and non-genetic forms of explanation are perceived as less effective in the prosecution of suspects.

Most testimonies talk about DNA testing as 'infallible', 'unproblematic' and 'straightforward', a 'truth machine' (Lynch et al 2008), which streamlines the investigative, legislative and political realms. Far from inaccurate representations of scientific information the correspondents' interpretation and understandings of DNA are part of a broader socio-cultural context which reflects the exceptional epistemic status given to DNA in crime investigations (Cole 2001; Lynch et al. 2008; Lynch 2013). Along such understandings of DNA's power, the richness and complexity of the multi-dimensional biopolitics dynamics (Novas and Rose 2000; Rose 2013) are equally illustrated by a growing preoccupation with ancestry:

I think DNA is one of the greatest advances in detection since the advent of finger printing. One hears of so many cases where crimes are solved by DNA evidence and, even more importantly, there are likely to be fewer instances of miscarriages of justice. Away from crime, DNA as a means of tracing parentage is an invaluable contribution for those who wish to discover their roots. It would have solved a significant problem for me had it been possible to apply DNA testing 30 years ago. (P3209, 72, married male, artist)

As Smart's (2009a, 2011) study of family secrets attests, the drive for genetic truth in familial relationships and understanding of DNA use for paternity testing as providing scientific certainty give weight to the process of active personalised identification (Schramm et al 2012) and illustrate the power of DNA as truth at a micro level of social interaction. This mirroring of certainty at an individual and collective level, in some of the closest personal matters and most pressing social ones, is a common theme in the replies to the 2011 Directive. In comparison to the 2006 Directive

accounts which emphasise medical genetics and DNA databases, the 2011 testimonies about DNA as truth in criminal investigation and outside it demonstrate its close place in the correspondents' self-perception, identity and views on law and order. Certain themes however, such as the moral conundrums generated by the perceived usefulness of DNA databases versus the problems raised by their governance are present in both.

More generally, and similar to Williams and Johnson's findings (2004), MO correspondents display equal excitement about the potential of DNA and fear regarding its use. While DNA fingerprinting is seen as reorganising a hierarchy of evidence, and securing the identification and conviction of guilty suspects, several correspondents raise the issue of contamination, sometimes in quick succession to acknowledging DNA as 'solid proof'. Alongside the potential for human error others are sceptical about the hype DNA generated and reflective about its use and cost:

DNA technology is a wonderful discovery, enabling detectives to solve crimes 30 or more years after they have been committed. It narrows down the chances of mistakes being made, with the so many million to one chances of it being a particular person over another. As long as the evidence has been bagged properly, and there can be no doubt of cross-contamination, then it sounds a wonderful chance to prove beyond almost any doubt that a particular person must have done the crime. (F4125, 46, married female, P/T clerical assistant for Health Visitors & School Nurses)

Accounts such as these capture the nuances of non-specialist understandings of DNA. They provide textured, self-produced narratives that go beyond formulaic statements in their unprompted consideration of 'for' and 'against' factors to give further depth and weight to participants' opinions. Revealing a body of individual knowledge rarely examined in public consultation exercises, the replies evidence how awareness of scientific information is woven into everyday concerns and balanced against sensationalist claims. Although previous analyses of the replies to the 2006 Directive found that the employment of DNA in policing was regarded as the least controversial option when compared to other uses (Wilson-Kovacs et al. 2012), they failed to acknowledge the dual character of topical public discourse and its 'wonderment and dread' characteristic (Williams and Johnson 2004). Not only does the different focus on crime and investigation presented in the 2011 Directive open this issue to renewed scrutiny, but it also help contextualise it in relation to the end-users of forensic DNA technologies, other methods of crime investigation and more generally, in relation to surveillance and policing.

DNA, surveillance and policing

Studies on attitudes towards policing identify citizens' assessments of social cohesion and consensus as instrumental to endorsing and legitimating police action and instilling public trust (Sunshine and Tyler 2003). As MO panellists look to the police to build, protect and strengthen social values and maintain norms, a dual, sometime contradictory narrative is presented. First, there is acceptance of forensic DNA databases, ranging from enthusiasm to pragmatic choice.

Secondly, there is also an ingrained suspicion of police mishandling potential evidence, reinforced by more general attitudes towards police and policing and drawn from limited personal experience. For those who had direct contact with the police this was brief and often restricted to the negative experience of break-ins, burglaries and stolen vehicle incidents, some of which dating back 30 or 40 years ago. While the contact itself is typically momentary and transitory, described in neutral terms that usually identify police as helpful, it is rarely informative. Indeed most of those offering such vignettes often reflect on the fact that the outcome of the investigation they had been part of remains unknown. Drawing on their limited experience of crime, the Panel considers their encounters with authorities during these events and finds confidence in police lacking. Similar to some of the correspondents' perceptions of increase in crime, these observations are valuable for their ability to illustrate, unmediated, how topical matters are reflected through the Panel's immediate concerns.

With surveillance and crime intimately yet not unproblematically connected (Coleman and McCahill 2011: 2), issues of accountability and transparency are voices in relation to other crime investigation tools, such as CCTV, as they are in connection to the use of DNA for prosecution purposes. As the 2011 Directive invited direct comparisons between different techniques of investigation it is perhaps not surprising that the expansion of CCTV surveillance is a much discussed topic. Not only is the growing presence and deployment of surveillance technologies acknowledged in the MO replies, but both the temporal and situational everyday-ness of CCTV (Barnard-Wills and Wells 2012) are begrudgingly accepted for the benefits the technology brings:

CCTV we're all used to. I vaguely resent its ubiquity, those grey rectangular metal boxes jutting out like gargoyles from every building. Then some murder or terrorist outrage gets committed and thanks to our old friend CCTV images of the perpetrators are available to help with their capture and conviction. So I suppose I grudgingly accept its usefulness, even if I do resent being visible to unseen watchers for most of my day (M3190, 53, married male, civil servant)

Practical concerns, such as the quality of CCTV images preoccupy most respondents, along familiar tropes such as the extent of state surveillance and its interference with personal freedom. The highlighting of crime in tabloid media and 'the continued focus on the criminal other' (Altheide and Coyle, 2006: 300) are duly noted as perpetuating a discourse of fear that can be easily nurtured by government officials and become part of the ways in which everyday life is known and explained.

This growth [of surveillance] was surely driven by the Daily Mail and its sensationalist mandate to drive fear into the lower and middle classes. (O04521, 38, married male, IT Manager)

Equally, Giddens' (1984) 'double hermeneutic', i.e. the ways in which social science ideas and terms work within the lay realm and impact upon popular culture, is illustrated here in the correspondents' acknowledgment of the use and acceptability of investigative tools as well as their raising questions about the effectiveness of various DNA technologies and the complexities of getting across a socially informed view on crime:

I would be interested to know how many crimes have been solved by using CCTV. (T4409, 32, married female, Local Government officer)

There is too little discussion about the limits of and limitations of these tools. I do not want to live in a society in which our every move is recorded and analysed. This is not because I am or wish to be a criminal but because my life is my business and I conduct it in a responsible way which does not invade the privacy of others. I expect the same from the state. (V3767, 73, married male, largely retired from managing my own company)

While crime investigation techniques can be seen as more or less effective fixes where scientific and technological expertise is mobilized to legitimate criminal justice practices, they can also be instrumental in undermining public confidence in official agencies (Neyroud and Disley 2008; Norris and McCahill 2006; Tracy and Morgan 2000; Wells 2008). The correspondents' testimonies illustrate this point in their comparisons of forensic technologies which highlight a widespread dissatisfaction with how policing is done. Although DNA and CCTV are described as 'wonderful' tools, the Panel is well aware of the changing nature of police work as well as that of crime:

I feel that these days there is an over reliance on DNA and CCTV surveillance. Police will take swabs and sit around waiting for the results or spend hours looking at CCTV footage instead of getting out and doing the leg work. At one time it was suspected that police officers could not wait to get out of the police station to speed around in patrol cars. The suspicion now is that they prefer to remain in the warm station peering at computer screens. (W2174, 67 years married male, retired civil servant)

This sentiment, shared by other members of the Panel is paralleled by the scrutiny of forensic DNA technologies and their use and usefulness in solving volume, rather than serious crime:

So far as I can see the 'cold case' squads seem to be making more use of advanced scientific techniques. (R470, widowed male, 78, retired LDV driver)

Likewise, more often than not, forensic DNA technologies are associated with sensational crimes and miscarriages of justice, rather than the humdrum of burglaries, thefts and break-ins:

I think too that, CCTV aside, the sophisticated techniques we're talking about here have little or no application to the small scale, meat and potatoes crimes the police deal with on a daily basis: the muggings, opportunistic burglaries, drunk and disorderly, car theft, metal-stealing, neighbour dispute stuff. (M3190, 53, married male, civil servant)

The lack of trust in the police evidenced elsewhere in the literature (Neyroud and Disley 2008; Norris and McCahill 2006; Tracy and Morgan 2000; Wells 2008) is present here in the beliefs that officers hide behind the technology, chase only the sensationalist cases and care little for their community. This view arguably reflects the anxieties of an elderly Panel and exemplifies correspondents' specific engagement with these issues. Not only do replies convey personal views on the advantages and limitations brought about by much hyped scientific developments, but they do so in a contextual manner, comparing and contrasting new techniques and commenting on their effectiveness from a situated, individual perspective. Parallel to the 'wonderment and dread' generated in public

discourse on genetic technologies (Williams and Johnson 2004), the correspondents' reflections on the extent to which such technologies impact on their everyday lives as vulnerable law-abiding citizens, offer a substantive, yet under-explored basis for a grounded understanding of the complex relationship between public awareness of scientific developments, their adoption and use by law and order agencies and the benefits such developments bring in real time to personal lives.

Accomplished amateurship

The richness and texture of the correspondents' opinions provide a much needed insight into the idea of 'publics'. Identified as essential facts of the modern landscape, 'publics' have generated much controversy, with commentators remarking that 'there are as many shades of difference among publics as there are in modes of address, style, and spaces of circulation'(Warner 2002: 54). Essentially non-homogenous, they are culturally mediated forms that 'do not exist apart from the discourse that addresses them' and are hard to quantify or study empirically. Illustrating this point are the ways in which MO correspondents decided to engage with the 2011 Directive's task that required panellists to comment on the references to DNA they over a week of their choosing.

Perceiving the task as 'fairly dull', some curtly declined: 'life is too short to spend it looking for references to DNA' (B4318, 68, married male, retired Head Teacher). Others offered apologies: 'It is highly unlikely I'll be listening to any form of news tomorrow, it's Saturday, I have committed to spend the day listening to Abba with my daughter, I hope you understand' (O4521, 38, married male, IT Manager), while others prepared for the task but failed to engage: 'Hopeless – I've tried to do this again but it doesn't really impinge on me. I give up!' (G4466, 48, cohabiting female, redundant). Equally, some seized this opportunity to assess the questions posed in Part 1 of the Directive:

(W)hat is the point of asking non-crime-professionals 'What developments would improve criminal investigation?' - our opinions are of no value. (B2710, 82, married male, retired clergyman)

Such replies arguably illustrate the gap deliberative public-engagement exercises try to bridge. While some MO correspondents identify themselves as less-knowledgeable members of the public, replies indicate both the need and possibility to explore further with the Panel issues surrounding the legitimacy and authority of the panellists' contribution. Moreover, not only do replies demonstrate the dialogic tone MO directives encourage and allow, with panellists clearly at ease in their dis/engagement with the task, but also capture how panellists explore and express opinions (or lack thereof) as they crystallise (Wilson-Kovacs et al 2012), a dimension of MO data rarely present in standard data production.

Those who decided to collect and comment on the references gathered offered glimpses into the process, with the task's minutia shedding light on the negotiations of meaning and situated action:

On the same day, a feature writer said that 'insulting the French whilst admiring their culture' was 'hardwired in the English DNA!' [(P1326, 74, married female, retired civil servant)

In a comment column, MP and historian Tristram Hunt quoted a journalist's metaphorical suggestion that free-market economics is 'hard-wired into the national DNA'. One thing I have noticed in the references I've spotted since the week ended is the frequency with which DNA is mentioned in a metaphorical rather than a strictly scientific sense (as in Tristram Hunt's quote). (B3227, 44, unmarried male).

Alongside the discovery of the metaphorical use and power of DNA references, the assumed ubiquity of DNA in fact and fiction also comes under scrutiny:

I have spent a week (25 December to 1 January) looking out for references to DNA and, surprisingly, have not spotted any. I wonder whether this is because DNA testing has now become so routine that it is not newsworthy other than in exceptional circumstances. In fiction, it also seems to have disappeared, probably because it has limited dramatic value – most crime fiction tends to rely on small clues and logical deduction, rather than the modern techniques which, at least for dramatic purposes, are perhaps too mechanistic and effective. (G4374, 45, married female, studying for PhD in music and director of chamber orchestra)

The awareness to the ways in which codes and symbols are used, alongside questioning their taken-for-granted quality, and reflections on the 'mechanistic and effective' quality of DNA and its little dramatic value in fictional representations, are not only different instances of forms of engagement which display correspondents' assertiveness, but also examples of the poli-vocality of interpretation and the ways in which different repertoires of action unfold. The uniqueness of MO as public exercise comes from the diversity of information presented, the range of sources used to gather information and the breadth and depth of observations made which can help capture a wider range of opinions from a more diverse audience (Anderson et al 2011; Collins and Evans 2003). Furthermore, it is reinforced by the interpretative modalities the correspondents use to scrutinise directives, comment on their requests and approach tasks. Such modalities illustrate the need to account for better and incorporate more fully the deliberative elements of sense-making processes through which non-specialist audiences choose to engage with issues of public concern.

Conclusion

Rooted in Geertzian thick description (Stanton 2005), MO represents 'an indispensable aid to tracing popular views and reactions' (Calder 1985: 125) which offers an extra dimension to social analysis. As existing studies on public attitudes to policing, crime examination and forensic DNA technologies tend to rely on quantitative methods and in particular surveys to map general opinion, MO testimonies help open 'worlds of meaning that have not yet revealed themselves' (Stanton 2005: 367) to social researchers. Presently, they offer an archive of everyday knowledge on DNA, crime, forensic technologies and policing and the lay articulations of sociological constructs such as privacy and identity.

Previous analysis of MO correspondents' views on DNA identified the contexts to which DNA is related and found that forensic DNA was regarded as the least problematic application of genetics (Wilson-Kovacs et al 2012). This rather surprising finding highlighted the benefits to the

improvement of the social body the application of DNA in policing brings. Showing how the Panel's accounts reflect and supplement public consultations, MO's ability to provide a platform for the exploration of themes and engagement of correspondents in a non-deliberative capacity was noted. Such an approach opens to scrutiny the range of motives and explanations correspondents offer to support their dis/interests in genetics and adds texture to the forensic imaginary (Williams 2010).

Similarly, present findings embed opinions into everyday experiences and provide ample topical justifications from the correspondents' perspectives. The MO replies are documents that attest and chart the significance genetics holds for their authors, and demonstrate the Panel's direct engagement with scientific knowledge. Rather than an isolated occurrence, resorting to such knowledge has been shown to help resolve the correspondents' familial concerns - for instance in relation to kinship, paternity issues, and the inheritance of various susceptible traits (Kramer 2011). It has also been used to establish genetic truths (Smart 2009a, 2011) and offer stability in uncertain times. More importantly, the replies to the various MO Directives which have requested scientific information have provided an invaluable resource for those seeking to understand how specialist knowledge becomes embedded in the fabric of individual lives and applied in everyday context.

As the issue of representativity of the MO Panel in relation to the UK population has been extensively discussed, commentators have agreed that although unable to provide national demographic trends, MO data is seen to offer alternative accounts of social and historical change (Savage 2007). It has been argued that the Panel's views illustrate the perspectives and positions of particular groups (e.g. carers, patients, teachers, etc.) and segments of the UK population and thus are typical in different ways and indicative of the opinions of a large number of citizens. More importantly, MO testimonies have been characterised as snapshots of everyday life, which rather than bearing statistical significance in the traditional sense, are meaningful in an individual way (Bloome et al. 1993; Calder 1985; Hubble 2006; Sheridan, 1993, 2000). In the present case, they illustrate the need to study both formal deliberative citizen engagement exercises and less targeted and more informal individual narratives, as distinct and inter-linked approaches to gauge opinions on DNA, forensic technologies and policing in the public sphere.

The place of science in public discourse is illustrated in both reflections on media representations of DNA and its use in policing and the correspondents' involvement with debates on scientific developments. Such reflections instance the heightened awareness to genetics and the practical, on-going interpretative process surrounding the application of meaning DNA technologies hold for each correspondent. Equally, MO testimonies illustrate both the extent and the fallibility of correspondents' knowledge of scientific and policy issues and reveal the complex ways in which such issues are made-sense of and understood. It is the inclusion of such qualitative data in extant analyses on lay and specialist collective understandings of DNA that can strengthen the reliability of their results (Curtis 2009; Michael 1998; Michael and Brown 2005; Wynne 1991). Similar to previous findings, the present analysis reinforces the need to fine-tune the ways in which public agendas are approached and addressed. More sophisticated and comprehensive analyses of publics and the intricate ways multiple sources are drawn on and combined into individuals' worldviews are required.

Furthermore, MO replies 'solve' the issue of authenticity (Smart 2009b) sociological data pose: MO data get us 'closer' to panellists, rendering their voices and positions in their full complexity, revealing uncertainties, tensions and discrepancies (the latter often acknowledged at length by correspondents themselves). Questions of verbatim transcription become less relevant as MO testimonies are assembled by the writers themselves and display not only embedded knowledge, but also bricolage practices, ethical conundrums and experimentation. Authenticity is further conveyed by the frankness of the replies (illustrated above for instance by the re-interpretation of the task and refusal to accomplish it), the focus on specific issues of interest to the MO writer (sometimes within a Directive's remit, sometimes outside it), and the individual approach to the accomplishing each directive's task. As correspondents draw upon distinct histories to illustrate their answers, insights of personal biographies come into view and places, relationships, mobilities and transitions are evoked to situate experiential vignettes and legitimate opinions. Yet, although correspondents' entries over the years can amass to an extended biographical corpus, the entries as they are less detailed and systematic than those present in smaller scale biographical research that captures specifically on changing identities and practices over the life course. This aside however, the vignettes submitted for each directive lay the foundation for the exploration of collective meanings and document personal lives. This auto-biographical kaleidoscope provides distinctive and embedded views whose genuine tone represents an invaluable resource for understanding the impact and resonance of topical debates on everyday lives. The glimpses offered can also, in relation to other collected data, help substantiate further analyses of public opinion, identify issues at stake and as such facilitate the dialogue between different stakeholders (Michael 1998; Michael and Brown 2005; Wynne 1991).

Thus, MO data affords a qualitative approach which has the ability to highlight the ways in which individuals (1) give meaning to and interpret their experiences, (2) contextualise their opinions and (3) present and reflect on their choices. While the data can tell us little in statistical terms about how differently aged, gendered and educated individuals possess and acquire various kinds of information, it can nevertheless provide crucial insights into how such information is consumed and made-sense of individually and collectively, its appreciation, the tensions and difficulties in its appropriation and incorporation into personal worldviews and influence upon their shaping (Wilson-Kovacs et al 2012).

Smart (2011) notes that the value of the MO data lies in 'the richness and depth of the narratives that many panellists provide, arising from the policy of the MOP to encourage people to write about actual experiences and real events, rather than offering opinions and attitudes' (2011: 564). What the present discussion demonstrates is that even when correspondents offer the latter, these are invariably embedded in real life stories and individual histories and more often than not provide personal reflections on the matters discussed. It is in such reflections that we can gain a fuller understanding of deliberative processes, contextualised opinions and acquire a more informed and nuanced grasp of positions and choices, with the MO testimonies supplying skilfully assembled worldviews.

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