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INTRODUCTION TO NGS SPECIAL ISSUE

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The origins of this special issue of *New Genetics & Society* lie in the response of the editors and a number of colleagues to a short exchange that was published in this journal in 2012. The exchange, between Hill and Turney (Turney 2010 & 2011; Hill 2011), concerned the role of DNA technology in the identification of bodies found following bush fires in the state of Victoria, Australia, in 2009. Whilst Hill, writing as a forensic scientist, was concerned to explain the logic of the scientific and operational procedures that comprise DNA identification in situations of mass disasters, Turney's sociological perspective was focussed on families' needs and sentiments as the dominant frame of reference for the analysis of the promises, constraints and accomplishments of forensic genetics in efforts to identify individuals caught up in such catastrophic events.

This rather confrontational exchange raised interesting issues about the relationship between the techno-scientific practice of forensic DNA identification, criminal justice and other state actors involved in disaster response efforts expectations, victims' families and friends' understandings and requirements, the mass media's role in the reporting of mass disaster incidents, and public perceptions of forensic science, especially forensic genetics. However, to adequately resolve the disciplinary and political differences exposed in the Hill-Turney exchange requires more detailed consideration of how the actions of those involved in mass disasters (especially as responders, witnesses, or relatives) shape, and are shaped by, various epistemic, organisational, political, and socio-ethical resources implicated in the use of forensic genetics to identify those who lose their lives in such events. Disaster victim identification (DVI) by DNA touches on many areas of profound significance to contemporary global societies, including: the contemporary authority of science and technology; beliefs and practices to do with death, burial, mourning, the body and body parts; notions of kinship, citizenship, community and continuity; as well as areas of more specialized social and legal interest such as inheritance, professionalisation and training in an emerging discipline, and cross-border jurisdictions.

The comparative novelty of DVI by DNA means that the social, ethical and legal issues associated with it remain significantly under-analysed. Research within the field has largely focused on the practical priorities of optimizing the technology, and developing the most effective, internationally portable set of identification procedures. There are many handbooks of 'good practice' in disaster victim identification (e.g. National Institute of Justice, 2006; INTERPOL, 2009; ICRC, 2007). There are reference texts for working scientists (e.g. Black *et al.*, 2010; Moore, 2006; Khardori, 2006) along with major reviews of current practice (e.g. Prinz *et al.* 2006), and special journal issues on particular DVI events (e.g. Thompson and Evison, 2003; Drummer and Cordner, 2011). Nevertheless, little attention has yet been paid to examining the broader issues associated with the use of DNA as a means of identifying remains in both contemporary and historical mass fatalities, although there is an emerging body of social science studies of DVI (e.g. Klinenberg, 2001; Petrović-Šteger, 2009; Wagner, 2008), critical analyses of the role of forensic genetics in closely related contexts (e.g. Williams & Johnson 2008), and socio-political reflections on state identification imperatives and their enactment (e.g. Edkins, 2011).

The authority of DNA identification and its uses in mass disaster situations remains intimately connected to medicine and the work of medical professionals. First, this is because of the need to

match unknown samples with DNA from possible family members, from fortuitously held medical samples, or with medical records. Second, it is because, in most western countries, unidentified human remains fall under the medical examiner or coroner's legal jurisdiction until released for burial. Yet using DNA technology in DVI also involves diverse *nonmedical* actors, ranging from the professional (e.g. forensic services, police, military), to the pastoral (e.g. family liaison services, religious representatives), to surviving family members. In today's highly mobile world, DVI by DNA also often involves the retrieval of medical and other information from multiple locations, each with potentially distinctive cultural and legal traditions.

Many of these matters, as well as those mentioned earlier in this introduction, were discussed in a workshop funded by the Brocher Foundation, *Naming the dead: social, ethical, legal and political issues of disaster victim identification by DNA*, which was held in Geneva 4-7 December 2012. The meeting attracted expert practitioners and academics, including representatives of the International Committee of the Red Cross, the International Commission on Missing Persons, UK National Police Family Liaison and others, in a ground-breaking cross-disciplinary event. This issue of *New Genetics & Society* is made up of papers selected from those given in the Brocher workshop.

Bodies, as Caroline Bennett notes, are inherently political and our treatment of them reveals societal ideologies and moral norms. The increasingly global nature of both disasters and disaster responses means that post-disaster identification now frequently takes place in situations where practitioners may be unfamiliar both with the prevailing ideologies and the moral norms of victims, communities and families. Drawing on fieldwork as a forensic scientist in Iraq and as an ethnologist in Cambodia, Bennett questions the assumption that DNA analysis is a universally appropriate tool in DVI. She argues that, although the Western media and public view DNA analysis as the ultimate provider of 'true' identity, this reflects a highly localised, Western scientific understanding of where identity is situated and how it relates to the physical remains of each individual, an understanding that may conflict with local socio-cultural beliefs and norms. The use of DVI by DNA may be less relevant, or even repugnant, to cultures with notions of identity that are not biologically based, or where the physical remains of a person are relatively unimportant to their memorialisation or social presence after death. Moreover, as a sophisticated and prestigious technology, the use of DNA-based DVI may be driven less by humanitarian motives and more by the political and social capital that it can give to individuals, organizations, and governments, and the opportunities it offers to exert control over local populations and claim a place within the global community. These considerations challenge us to look again at the routinisation of DVI by DNA and to consider whether and when other routes to identification may be more culturally acceptable.

Papers by Williams & Wienroth and Haimes & Toom examine, at different levels of granularity, the ways in which developments in DNA technology have meant that they have become increasing central to DVI efforts. These papers also consider how such developments are related to wider epistemic, organisational and social concerns about identity and identification in modernity, as well as how the credibility of genetic knowledge is used to reduce uncertainty in a variety of legal deliberations. Williams & Wienroth offer an account of the overall role of DNA profiling and matching in the contemporary 'biometric regime of identification', noting that this regime is increasingly extended to the authoritative identification of the dead as well as to the living. Focussing on the place of forensic genetics in the development of an increasingly complex and cross-national disaster response apparatus, they borrow existing concepts used to describe the

trajectories of technology adoption in medical contexts to illuminate how and why the geneticization of DVI has become so easily normalised. Finally they use this history to reflect on the mutuality of the practical application of genetic technologies of identification on the one hand and longstanding philosophical assertions of the essentials of identity on the other.

Haimés & Toom provide a nuanced account of how 'social relatedness' is constituted in and through the technical and legal work that makes up authoritative disaster (or atrocity) victim identification as well as the ways in which such biolegal determinations may be supported or interfered with by understandings of kinship, genetics, identity, and obligation that circulate more widely within particular social configurations. This general exploration is given a sharp focus through a detailed examination of a conspicuous instance of the use of DNA for atrocity victim identification - the trial of Radovan Karadžić at the International Criminal Tribunal for the former Yugoslavia -- and, in particular, an analysis of the judicial ruling that responded to Karadžić's request to access the DNA database used in the identification of victims, cited in the charges laid against him. Through the analysis of a single document, Haimés and Toom make visible a series of absences and silent assumptions concerning kinship that serve to support the authority of the legal ruling. Their study also shows how such an examination of taken-for-granted assumptions about the connections between genetics and kinship throw into relief the many complexities that inevitably arise when the law, scientific knowledge and the quotidian are brought together in practical undertakings, as well as the resources that are used to reduce these complexities in any particular instance.

Two further papers address, in different ways, the same example of historical identification: the recent excavation of the remains of 250 Australian soldiers dating from World War I from mass graves in Fromelles, northern France, and the project that attempted to identify them by name through DNA matching with their descendants. Margaret Cox and Peter Jones write from the perspectives of a forensic anthropologist and a molecular biologist respectively. They give an account of how the Fromelles Project was devised and progressed and, as practitioners directly involved in the Project, provide a unique insight into the ethical issues and debates that were encountered as the Project developed. Some of these, such as obtaining proper informed consent from donors of DNA, are shared with many other biotechnological areas. As the Fromelles Project was the first of its kind, however, other areas were more novel, such as questions about the ethically and socially appropriate terminology to use for the dead, or how to manage the media-driven expectations that family members had about DNA-based identifications. As we noted earlier, there has so far been relatively little examination of the social and ethical aspects of DVI by DNA, and this underscores the importance of taking note of the experience and perspectives of those professionally involved. This ensures that the social and bioethical analysis remains grounded in the practical realities of DVI work and, equally importantly, can contribute to strengthening its ethical framework for the future.

Scully's paper also examines the Fromelles identification project, but this time using an empirical approach to explore in detail how living family members experience some of the ethical issues involved. Drawing on a pilot study examining why family members chose to provide DNA samples (or not), her analysis suggests that volunteering DNA for identification purposes can be understood as an act of care directed variously at the dead soldier, at other family members, at the family as a whole, or even at the donor her or himself. By placing historical DVI by DNA within the context of care, Scully is able then to analyse it within the framework of the ethics of care, and in doing so

identify some distinctive normative issues. Although historical identifications, like the one undertaken for the dead of Fromelles, might be considered marginal within the wider context of DVI by DNA, Scully argues that precisely because some of the more urgent rationales for identification are lacking, these cases reveal more subtle aspects of the practice, such as the vulnerabilities of the families and communities to the power of social, political and epistemic power of external authorities. These issues may have relevance beyond historical identifications to mass fatality identification as a whole.

Finally, Woods' paper turns away from the scientific and organisational particularities of DNA identification practices in order to consider the grounds of some of the normative preoccupations which underpin the willingness of state and other national and international agencies to invest significant amounts of economic, human and scientific capital into the identification of victims as a necessary feature of mass disaster response. Arguing that the 'underlying ethics of disaster management' are best interrogated by consideration of three basis propositions (that 'the dead matter', that 'the body matters,' and that caring for the dead and caring for the living are 'intimately connected'), Woods deploys a range of anthropological and philosophical resources to support a critique of the currently influential, rationalised and professionalised 'Epicurian model of bioethics'. S/he argues for its replacement by an 'ethics of care' within which we can evaluate the moral propriety along with the technical effectiveness of the ways in which disaster victim identification is carried out in contemporary society.

The six papers in this special issue draw on a variety of disciplinary resources –including philosophy, anthropology, science and technology studies, and sociology – as well as the experience of practical involvement, in order to explore how DNA profiling and matching technologies have now become a routine resource in the efforts to restore social order following both natural and anthropogenically occasioned disasters and atrocities. They highlight the ways in which such innovations utilise, modify and disrupt a range of epistemic, practical and moral preferences about individual and social bodies and their relationship to each another. Some authors seek to integrate empirical inquiry with normative reflection, but none have offered prescriptive conclusions. Indeed, each of them underlines the dangers of premature foreclosure of genuine inquiry into the consequences of a practice that is increasingly presented as routine and unproblematic. Instead, they aim to encourage and support the ongoing conversations between those with direct experience of DVI by DNA – practitioners of different kinds, designers of policy and regulations, and the families and communities affected by mass fatalities – and those ethicists, philosophers, anthropologists and sociologists who bring their disciplinary skills to the task of studying the practice. As authors and guest editors, we hope that this special issue serves to stimulate further critical engagement with the ethical and social issues raised by the use of DNA-based technologies in DVI and elsewhere.

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