



**European Project on Biometric Identification Technology Ethics (BITE)
Report of the First Meeting held on Monday 24th January 2004, Lancaster, UK.**

In structuring this report I will begin with some descriptive elements, followed by summaries of the presentations and the panel, interspersed with discussion on the wide range of issues covered. The first BITE meeting was hosted by the Centre for Economic and Social Aspects of Genomics (CESAGen) at Lancaster University, UK, and was chaired by CESAGen director Professor Ruth Chadwick. Approximately 25 people were in attendance and this number comprised project partners, invited speakers and a wider pool of invited members including several from CESAGen. The format for the day was an introduction to the project by Emilio Mordini (CSSC, Italy), three specific presentations, and then after lunch a wider panel discussion providing an opportunity to explore the social, ethical, theoretical and practical aspects of biometrics. The three specific presentations were as follows. Martin Evison (Sheffield University, UK) spoke on 'Human Identification', Robin Williams (University of Durham, UK) on 'Genetic Identification and Criminal Investigation: Making and Using Forensic DNA Databases', and Irma Van Der Ploeg (Erasmus University of Rotterdam, The Netherlands) on 'Genetics, Biometrics and the Informatisation of the Body'.

Prior to these presentations Mordini, as well as introducing the aims and organisation of the BITE project, began the process of outlining some of the important issues. He offered a definition of biometrics as *'The scientific discipline of measuring relevant attributes of living individuals or populations to identify active properties or unique characteristics'*. Most definitions of biometrics focus on intrinsic elements of the body as potentially reliable markers of physical identity. Yet if biometrics are essentially about measuring and tracking bodies in time and space there is the possibility of thinking about extrinsic applications, including devices such as CCTV, GPS and mobile phones for examples. The issue of definition shall be returned to below. Mordini outlined some of the main uses of biometrics including the evaluation of changes over time for medical monitoring and a more general application of authentication and identification. Moreover he alluded to some of the problems biometrics has in capturing a sense of identity since it requires attributes which are, for example, universal, consistent, inimitable, collectable and cheaply comparable. Thinking through some of the various ways in which 'identity' is understood, Mordini underlined that the BITE project will address the interrelated concepts of identity and identification, including both their philosophical and social constructions. He also began the days task of thinking through our ethical and social concerns with biometric technologies. These include the dangers of 'function creep', data misuse, the reduction of the body to information and the potential for fostering social stigma.

Martin Evison's presentation addressed the issue of human identification, some of the drivers behind biometrics and some of the outstanding challenges. Evison is involved in an FBI funded project aimed at aiding evidential facial identification in court situations. This recognises the present day poor quality nature of CCTV images and so constructs a mathematical and statistical technique by which to estimate face shape frequency and aid jury decision making. Research such as this highlights the process of convergence between different types of technologies, echoing the focus on the potential convergence of genetics and biometrics in the BITE project. When asked to define 'human identification', Evison framed this as the other side of the coin from variation. It is



about the isolation of the uniform, the markable and the recordable. But is a far from easy task to find a stable bodily marker within the process and agency of the body.

For Evison, reflecting on his work in forensic pathology and anthropology, a relatively wide definition of biometrics is preferred, beyond the usual list of fingerprint, iris, DNA and so on. He included a wider physiology, traits such as height and build, as well as behavioural biometrics such as stance and type of walk. There are clearly issues here about how one conceptualises the body, with the view that it is solely biological likely to be of limited help for biometrics. Sociologists argue that the body is simultaneously social and biological. Recognising both the social and ecological contexts of embodiment would at least explain some of the difficulties that biometricians have had in their search for supposedly static aspects of the body that can be translated into data and serve as safe arbiters of truth against fraudulent imitation. This goal, as Evison described, is precisely a major driver of biometrics; the prevention of identity theft, online fraud and credit card fraud. These were distinguished from the following 'external' factors driving biometrics: genomics, bioinformatics, defence/biodefence, post-disaster identification, pharmaceuticals, clinical diagnosis, and environmental analysis. Quite how these were external was not wholly clear and more generally, I think, further research into the complex and interconnected drivers of biometric technologies is required. Further drivers include the use of biometrics in companion animals and in the tracking of agricultural animals for purposes of health status or welfare standards.

Evison turned his attention to the potential use of DNA in biometrics. The current synopsis is that there remain some important problems to be worked out, such as the speeding up of DNA testing, cheaper ways of performing the process and reliable means of protecting samples from contamination. Thus one envisioned goal of real time nanoscale detection of 'biometric molecules' remains some way off. Mordini raised the concern that DNA code stored in a database could be used to yield other information about persons, such as medically salient information. However, Evison responded that the actual samples stored would have practically no relationship to health issues.

With the presentation by Robin Williams the discussion turned toward the use of DNA databases for criminal investigation. There is a growing trend for states to set up databases, and those that already have them are engaged in encouraging their spread elsewhere (e.g. David Blunkett at the July 2004 G5 Summit), presumably to aid the investigation of cross-border crime. Moreover Williams pointed out that they are clearly more effective as they become more inclusive and that the degree of inclusiveness tends to increase over time. This has raised fears that such databases are engaged in the kind of 'function creep' alluded to by Mordini above. Certainly in the UK, recognised as the 'world leader' in forensic DNA databases, the criteria for inclusion has advanced from those people convicted of a crime, to those charged, and then in 2004, simply to those arrested. This seems to institutionalise the prejudicial assumption that 'there is no smoke without fire'. Raising regulatory concerns, Williams pointed out that there was no specific legislation passed to set up the database (prior legislation was simply amended). Accountability concerns were further highlighted with the degree of central government funding involved: £182m in the first four years, and a further £60m in 2005. Concerns of the security of the database were highlighted in that the biological material is currently owned by the police, and operated by the Forensic Science Service (FSS), a body that may soon be privatised. Williams alluded to the societal assumption that prisoners, in contrast to the wider population, have to an extent foregone their privacy rights. Yet



this assumes that it is acceptable for people to be punished on top of their actual sentence and excludes the point that many people on the database are not guilty of anything.

Methodologically, Williams' research focuses upon the interplay between what he termed 'sites of operation' and 'sites of deliberation'. The former refers to the actual contexts in which various types of forensic practice are developed and implemented, the construction of forensic artefacts and the growing range of forensic databases. Sites of *deliberation* refer then to policy contexts where the governance and regulation of the use of forensic and biometric science in criminal investigations are deliberated and framed in particular ways. For example, how are identities understood and given meaning in the interplay between these two sites? One consequence is that new categories of identity have been shown to emerge such as 'known active suspect offenders' which, as Williams implied, seem at worst oxymoronic and at best, in need of unpacking. Toward the end of his paper Williams spoke about moves to attempt to harmonise international policing which would presumably also mean an export of the UK experience and methods of setting up and operating its forensic DNA database. He indicated that the use of a DNA profile in a biometric passport is still some way off. The question session that followed discussed the potential dangers of other databases (health or insurance) being integrated into forensic databases without consent and tried to account for why the UK in particular had become the 'world leader' in the area of forensic databases. This was difficult to fully answer but was discussed in terms of past serious forensic failures and a political discourse of crime control as being significant drivers.

Irma Van Der Ploeg's paper began by outlining the proliferation of technologies generating, storing and processing digital 'body data'. In terms of looking at confluences between genetics and biometrics she listed research into DNA banking and DNA identity cards, shifts from fingerprinting to profiling, and from the medical mapping of monogenetic causality and aetiology to multi-factorial probabilities and predispositions. Clearly also the burgeoning field of bioinformatics, defined broadly as the development and use of computational and mathematical methods for the acquisition, archiving, analysis and interpretation of biological information to determine biological functions and mechanisms, also plays a major role in what Van Der Ploeg calls the 'informatisation of the body'. It is a growing field that feeds off the conversion of DNA into data by the science of genomics and could similarly play an important role in future biometrics.

Yet the main focus of her paper was to try and think theoretically about the proliferation of discourses of the 'body as information'. Here the implication was that this trend represented a continuity with modernist themes of rationalising and reducing the body. In this way biometrics appears as a thoroughly concerted, and perhaps desperate, attempt to render the body representable. It reflects modernist pre-occupations with the epistemological privileging of the body and a related commitment to essence. It seems to not fully appreciate either the ecology or the sociality of the body which is one reason why the search for the best stable biometric is so fraught, and also why subterfuge is so possible.

In thinking through the redefinition of the body by means of a wide range of technological practices, scientific discourses and popular culture Van Der Ploeg historicised the process by reference to the emergence of twentieth century sciences such as endocrinology, immunology and genetics. Furthermore, for Van Der Ploeg, developments in medical diagnostics (especially in reproductive medicine and management), new visualisation techniques and a broadening out of



biometric identification or registration into new areas of daily life have all played a role. These have inspired gradual changes in our self-understanding which, she argued, now mean that we see our bodies more and more as ‘made up of information’.

The remainder of the paper was concerned with exploring the ethical implications of such a redefinition of the body where its boundary is weakened, with perhaps ‘parts’ of one’s body being located elsewhere, privatised and ‘owned’ by someone else. It is worth asking whether the phrase ‘the informatisation of the body’ refers to something that is far broader than biometrics. Or is it useful to broaden our definition of biometrics? This could be as above with some of the technologies which are external to the body but play a similar role of tracking bodies in time and space, but can also then yield digital information for example. Perhaps it is useful to distinguish between biometric measures, biometric devices and biometric information. The first category would include fingerprints, the iris and DNA and such like, the second would refer to new scanners, ID cards but also technologies such as CCTV, and the third could allow for a much broader inclusion of information such as doctors’ records and abstract bioinformatics. As the BITE project proceeds it should become apparent as to whether this distinction is useful..

For Van Der Ploeg, the main ethical implications refer to issues of personal privacy and bodily integrity, identity and determinism and the dangers of categorising and constructing social groups in rather homogenising ways. Thus biometrics should not be viewed as innocent gradings, markings and trackings, but as a technology also capable of producing new forms of knowledge. She alerted us to having one’s biometric information acting like a personal shadow, a potentially stigmatising ascribed identity that we may end up having little personal control over. In thinking through the ethical implications she emphasised the danger of falling into methodological individualism which is sometimes said to be predominant in contemporary ethical debate. This can be summed up as a shallow individualistic framing of a problem. In the case of biometrics, it would be to merely think about the social, ethical, legal and political aspects in terms of informed consent and privacy. In a similar vein she identified this individualism in operation in the policy context where a discourse of defence places the burden on the individual level. In contrast to this a discourse of citizenship could place vigilance on the level of democratic institutions.

In the question session Mordini asked whether the security context post 9/11 had encouraged a return to a notion of fixed identities such as a reinscription of the importance of national identity. It was suggested both that it was probably more contextually complex and that the proliferation of security discourses predated 9/11. Mick Dillon suggested that the informatisation of the body ran in parallel and interconnection with the informatisation of populations. This seems like an important point if we want our analyses to include state regulations and increasingly globalising biometric policies.

The meeting was completed with a panel discussion in the afternoon which gave an opportunity for those who had not given presentations to contribute. Several participants tried to make sense of the wider social and cultural processes of which biometrics may be a part. Drawing upon his own work Mick Dillon outlined two related processes of molecularisation, where ‘life’ is understood as code, and digitalisation, where language becomes code. Biometrics seems in particular to speak to the first process where first life is biologised, then biologised life informationalised, and the information yielded becomes code. Dillon described code as the new common denominator of all



life forms. Life as code is then enabled, open to new ‘animation’, ‘combination’, to take on new forms. Biometrics informationalises biologised life (recall that biometrics focuses on ‘identity as biological’) and then participates in the coding of that information. The recombinatory stage of biometrically constructed code would then be expressed in the emergence of new knowledges or forms of identity. The specific use of coded DNA in biometrics is an example of the recombination of at least two new forms of coded life. This analysis implies a particular orientation to materialities at play in contemporary science and technology which is both reductionist and transformatory.

Several metaphors were employed and discussed as a way to think about the biometric body. Mordini, whilst noting the ‘liveliness’ of the face, compared the conversion of the body into code as a symbolic attempt to render the body like a corpse. Of course the literal biometric identification of a corpse is no easier as even in death the body is engaged in ‘lively’ decomposition.

Niall Scott offered the science fiction figure of the zombie as a possible heuristic metaphor. As mentioned above, since the physiological body is understood as the ‘real’ and measurable location of identity in biometrics, this is for the most part, its main concern. A zombie is of course akin to this as it is the very idea of a ‘soulless’, physiological being. The zombie metaphor then can serve to bring to light some of the peculiar understandings of identity that may be at play in biometrics. As Scott pointed out, biometrics purports to link to a person’s history in some way, yet it shows little interest in a person’s biography or social relationships as a way of thinking about identity. In tracking bodies through time it redefines history as biology. The zombie metaphor has at least one more dimension. The zombie is a *reanimated* corpse which echoes the reanimation and recombinant talk of Dillon above, and so perhaps represents a good metaphor for the productive powers of biometrics, most literally in the construction of 3D profiles of the dead.

Arguing for a conceptual relation to the figures of the corpse and the zombie, Richard Twine pointed out that in certain contexts the animal is also deemed merely physiological. Clearly in companion animal contexts animals are often awarded a complimentary pseudo-subjectivity and biometrics are used for health monitoring and perhaps in the future for locating the lost. Yet even in contexts of objectification such as animal agriculture needs have emerged to note the identity of *individual* animals. This stands in stark contrast to the familiar frame of homogenisation common to, for example, the factory farm environment. Biometrics are used and in development to track the medical status of animals as concerns grow about animal disease, as they either jump specie barrier to the human or effect agricultural productivity. This is not really a threat to the frame of homogenisation as it is, as above with the human, an understanding of identity in biological terms. There is a sense in which emerging sciences such as biometrics and genomics do not see a difference between animal and human bodies, but equate one with the other as materiality to be coded or sequenced. Yet the institutionalised differences in moral construction mean that ‘more can be done’ with animal bodies. Consequently it is useful to keep an eye on animal biometrics in order to think through our ethical concerns with biometrics more generally.

In conclusion the meeting revealed that although the use of DNA as a biometric measure is well underway in databases, forensic science and archaeology/anthropology, it remains costly and time consuming. These constraints act against the short term adoption of DNA as a biometric measure in conjunction with biometric devices such as scanners or ID cards. Looking forward to future



meetings of the BITE project further discussion of current and proposed legal and regulatory frameworks is required, as well as more of a focus upon any specific issues to different population groups. However it was unanimous that this first meeting had provided a highly stimulating and rewarding introduction to the project and its focus.

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(compiled 27th January 2005).