1

Introduction

The body is not a beginning. It is not a starting point.

(Cream, 1994: 2)

1.1 Introduction and some historical context

Study of the physical body has a long history, with the first recorded anatomical dissections performed in Alexandria during the third century BC (Sawday, 1995; Carlino, 1999). Anatomical knowledge of the human body in the Western world was then further expanded by Galen and his followers in the second century AD (Sawday, 1995). Galen stated that students of the human body should learn it in a specific order: from the innermost to the outermost (though there is no mention of the skin) (Connor, 2004). Later, in AD 1543, Andrea Vesalius published his beautifully illustrated *De Humani Corporis Fabrica Libri Septem*, which marked a turning point in the study of human anatomy. From this point onwards we see a dramatic increase in the number and detail of visual representations of the human body in drawings and carvings (see Rifkin et al., 2006 for many examples and discussion). The human body continues to fascinate and challenge researchers and students. As a consequence of this continuous interest in ourselves, scholars have written vast amounts about the body; about its form, its function, its structure and its evolution; how it works and how it fails; how it changes and responds and how it maintains balance and homeostasis throughout the life course. Few things are as interesting to as many people as our own bodies and, directly related to this, our own identities.

This book is about the body: its role in human identification (e.g. in forensic and archaeological contexts), in the forging of identities and the multitude of ways in which it embodies our social worlds. In recent years academic

discourse regarding the body has developed a more nuanced understanding of the relationship between body, environment and society. This, therefore, seems an appropriate time to reflect on these developments in relation to those disciplines engaged with human identification and the embodiment of identity. Here, we take a holistic view of the topic and discuss the materiality of the body in relation to current discourse within the social and biological sciences and its construction and categorisation within scientific and popular discourse, with particular reference to bioarchaeology and forensic science. With the exception of anthropology, the body remained largely absent from the social science literature, relegated to the status of a biological vessel in which the human social agent happens to reside (Turner, 1991; Shilling, 1993; Jackson & Scott, 2002); the body as an organic system was either allocated to biomedical disciplines, or as Turner has stated, viewed as 'an environmental constraint' (1991: 7–8). Textbooks on 'the body' generally comprise densely descriptive, heavily illustrated anatomical tomes, with little consideration given to the powerful influence of social context. The science–theory, mind–body divide meant that the 'biological' aspects of the body were the preserve of those engaged with scientific discourses (such as human identification) while social identity as a culturally specific and historical construct was a distinctive field of study in which the physical body was viewed as a largely passive 'absent presence' (Shilling, 1993).

With the pioneering work of authors such as Turner (1996) and Shilling (1993), the role of the physical body in social identity and the dialectical relationship between the two became a fresh focus of study. Flesh and blood for the first time featured in the social science research agenda. The literature in this area has blossomed since the 1990s with a number of influential books and articles exploring the active role of the physical body in human interaction and how the body is, in turn, moulded by society. A testament to this burgeoning subject was the founding of the journal *Body and Society* in 1995. While this new body-centred discourse has been highly influential within the social sciences, it has had a limited impact within the 'harder' biological disciplines, such as anatomy, biomedicine, forensic science, biometrics and genetics. It is worth noting that within anthropology the body has long been a focus of study, albeit in descriptive physiological categorisations or as a site of social mediation within ethnographic studies. Within archaeology, the embodiment of identity has received a considerable amount of attention in recent years, and some of this discourse has engaged with the body as a physical entity rather than simply as a passive clothes horse for material culture (e.g. Meskell, 1999; Joyce, 2005, 2008; Gowland & Knüsel, 2006; Sofaer, 2006; Borić & Robb, 2008; Rebay-Salisbury et al. 2010). The significance of the physical remains of the body as an essential

source of data for reconstructing past lifeways has been a focus of study in bioarchaeology for many years. The more explicit theorisation of these remains as the physiological embodiment of social processes and integration with social theory has only surfaced more recently, however (e.g. Gowland & Knüsel, 2006; Sofaer, 2006; Knudson & Stojanowski, 2009).

These subjects all deal with the physical matter of the body and, whether explicitly acknowledged or not, social identity. Usually the body is treated as a universal; characteristics such as sex, age and 'race' are considered solely in biological terms. Much of this research still occurs in isolation from the social science literature concerning social identity and embodiment. Consequently, terms such as 'gender' and 'ethnicity', when they do infiltrate the scientific arena, are often poorly defined or employed incorrectly (for a discussion of this see, for example, Walker & Cook, 1998; Shim, 2005). The techniques whereby 'biological' characteristics such as sex and age are assigned to individuals within a human identification context (e.g. forensic practice, anthropology, archaeology) are described in objective, scientific terms. This cloak of objectivity, however, masks a multitude of uncertainties, not all accurately represented in the stated results. Much of this uncertainty arises because of the difficulty in mapping or describing statistically the spectrum of human variability. But this is not the whole picture. The science of human identification in all of its guises has had a long and chequered history: scientists practise their arts through the lens of their own historically situated culture and identity within it (Lewontin, 1991). Since the 1990s in particular, the conception of the science of biology as pure and objective has been increasingly questioned, particularly in relation to feminist discourse (e.g. Schiebinger, 1986; Laqueur, 1990; Spannier, 1995). For example, Spannier has argued that ultimately scientists present 'a partial vision skewed by invisible biases' (1995: 3). Science strives for objectivity and methods are tailored accordingly, but scientific endeavour has a long-established 'inherent sociality' in its construction and practice (Lambert & McDonald, 2009: 5). As Sheldon observes, 'Objective truth is a scientific aspiration but sociologically speaking it remains an impossibility' (2002). Schiebinger also expresses these sentiments when she states that 'neither science nor transhistorical bodies exist apart from culture' (2004: xiii). The body is in reality open to many different and competing interpretations (Crossland, 2009b).

In this book, we discuss the way in which the body has been conceptualised in much of the human identification literature as distinct from the concerns of social theory and the way in which our biological tissues are saturated and shaped by our social environment. The key aim of this book is to examine the different tissues of the human body and the way in which these contribute to human identification and identity research by synthesising and integrating

these two traditionally disparate strands of research on the human body. Previous volumes that have attempted such an integrated approach have often focussed on one aspect or biological structure of the body (e.g. the skin or the skeleton). This book is unique in that it examines each layer from the outermost to the innermost, from the macro to the micro level. Here, we explore the tension between the social and biological disciplines in relation to the various bodily structures and examine the way in which characteristics of the body have been harnessed within human identification contexts to infer aspects of identity.

1.2 Human identification: historical context and modern applications

Now, as in the past, discussion of the biology of the body invariably leads to the application of that understanding in a more applied context, that of human identification. As already stated, in this book we focus on the physical tissues of the body as these are the raw materials those within the human identification sciences work with, though from differing academic contexts and perspectives. So we must consider the body first, as it provides a context for all subsequent discussions, and it allows us to state why this topic is of such importance and why we must discuss it fully.

When we consider human identification, perhaps the first question to pose should not be how do we do it (discussed in detail in the following chapters), but rather why do we do it? Why do we study the body in order to identify people? As Williams and Johnson note, 'There are instances of practice which use the body in ways that are not necessarily medical or surgical but that are designed to render it observable and amenable to control' (2008: 25). Throughout this book we will refer to 'human identification contexts'. We mean by this, for the most part, those situations in which the identity of an individual is assessed or described by a third party using scientific techniques. This situation may arise for several reasons, including: the individual is dead and his or her identity unknown (e.g. in archaeological and forensic contexts), the individual is living but unable to provide that information (e.g. an infant or an unconscious individual) or proof of identity is required (e.g. often using biometric technologies). Identifications of this sort occur in a wide range of disciplines, yet in all cases a successful identification is one in which the biological profile ascribed by the scientist closely matches the culturally understood identity categories. Within biomedical contexts, identities such as age, sex, ethnicity and so forth are significant for, amongst other things, epidemiological studies and the characterisation of disease processes. Within bioarchaeology, such identifications are

fundamental to our understanding of the structure of past societies, as well as past human interactions and environments. Within a forensic context, human identification is necessary for establishing both victim and criminal identifications and, more recently, for resolving issues of national security.

If we wish to think about human identification as a fully fledged scientific discipline, it is worth considering its origins, some of which reside in the more dubious pseudoscientific Victorian disciplines of physiognomy and phrenology. These studies were driven by, amongst other things, an interest in criminology, whereby physical appearance and moral character were closely linked (Twine, 2002: 67). This is also referred to as 'biocriminology', and disciplines such as criminology remain preoccupied with the body (Wright & Miller, 1998; Twine, 2002; Walby & Carrier, 2010). Physiognomy still permeates a great deal of the underlying assumptions concerning identities such as 'race', class and gender:

> [T]he belief that you can read the character of another from their appearance is an historically pervasive phenomenon. Actual written treatises on physiognomy date back to at least Aristotle's (384–322 BC) and his teacher Plato's (427–348 BC) theory linking physical beauty with moral goodness. (Twine, 2002: 69)

Physiognomy formed part of the intellectual and political landscape of the Victorian era when science and pseudoscience were employed to naturalise social groupings. Work in this vein was very similar to that of well-known Italian criminal anthropologist Cesare Lombroso, who re-emphasised criminality as physiognomically written on the body, for example, the view of female criminals as having thicker-than-average jaws (Lombroso & Ferrero, 1895). Lombroso referred to the body in three key and interrelated ways: as the criminal body, the punishable body and the social body (Walby & Carrier, 2010). The first of these three is associated with 'spotting' criminality from the physical form and is the approach we most associate with him. He also argued, however, that the physicality of the body should be studied and measured as a means of assigning punishment for crimes. This was termed 'judicial anthropometry', as it assumed that the body would reveal the dangerousness of an individual and that in turn should relate to the seriousness of the punishment (Walby & Carrier, 2010). Further, as Crossland notes, the increase in photographing criminals at that time afforded a form of 'mute testimony', a visual means of recording and sharing the supposed physicality of criminality (2009b). As Twine discusses:

> [I]nferiorizations of others along lines of age, gender, class, 'race' and species are complex and different but there is a commonality in that they all draw upon a physiognomic marking of a body

> that makes unsubstantiated and generalized claims upon the subjectivity of the (human) being in question. Aged skin and senility, black skin and criminality, such stereotypes still inform the social scene. We continue to give life to specific physiognomic and phrenological language when we speak of people as 'high or lowbrow', 'thick-headed' or 'thick-necked'. Moreover, links between appearance and identity are often the subtext to many contemporary issues related to self. (2002: 82)

Throughout history, pathological conditions marking the external surface of the body have been thought to reflect the inner moral or spiritual degradation of the sufferer; this is particularly apparent in early medieval accounts of disease, care and treatment (e.g. see Rawcliffe, 2006). For example, external blemishes or defects would make a man unworthy of holding high office, thus making an explicit link between physical appearance and status (Crawford, 2010: 96). Interestingly, even scientific interpretations of Anglo-Saxon skeletal remains centuries later draw on physiological characteristics to infer moral and intellectual character. A striking example of this is the skeletal report on the Anglo-Saxon cemetery of Broadchalke, Kent, in which the physical anthropologist writes of one skeleton:

> Many of his features are effeminate. He reproduces characters which one can identify amongst those living round us. His head is large; the volume of his brain I estimate at 1600cc, about 120cc above the modern average … These are conditions we do not meet amongst primitive races … In this community we meet not a robust strong-limbed warrior, but a big-brained man who may well have been statesman, philosopher, poet, or clergyman. (Keith, 1925: 98)

The association between external appearance and inner character is also apparent when one examines the attitudes towards the poor in industrialised England. The wretched physical condition of the working classes in the early nineteenth century was seen as reflecting their overall moral inferiority to the higher classes rather than as stemming from their appalling working conditions, lack of education and poverty (Chapter 2). This link between physiology and intellectual and moral characteristics culminated in eugenic thought and reached its pinnacle of horror in the Nazi gas chambers. Even today the link between our outer and inner selves persists; tall people are more likely to receive promotion at work than short people; beauty (and youth) is revered and those so graced placed on a pedestal while perceived ugliness is socially debilitating. We are an ocular-centric species and, though entirely culturally

specific, the interpretation of behavioural characteristics from the physical form is deeply imbued within our psyche. As we shall see throughout this book, while the technologies and language for describing human physiognomy may have changed, some of the underlying assumptions regarding biology and social behaviour have not.

1.2.1 *Human identification disciplines*

Many of the identification sciences serve the judicial and medico-legal context through the identification of both the living and the dead, and as Christensen and Crowder note: 'it is clear that science and the law continue to interact and interrelate' (2009: 1215). Examples discussed in this book include the relationship between DNA identification and the law (Chapter 6) and organ transplantation and the status of 'brain death' (Chapter 4). Many differing requirements exist within this broad area of the forensic sciences. For example, we might consider the identification of unknown individuals who cannot or will not identify themselves. In this context, a person may need to be identified through a tiny fragment of his or her physical being and the requirement here tends to link a person (living or dead) to a site of criminal activity or to a particular location. While within Western discourse we conceive the body as a bounded entity, this type of forensic analysis is predicated on the fact that in actuality our boundaries are permeable; our bodies imbibe and excrete, they exchange and shed, leaving an invisible corporeal trail wherever we go. As Bildhauer observes: 'Despite the usefulness of the model of the body as a separate, enclosed unit, then, this view is not at all obvious, and instead needs a lot of cultural work to be upheld' (2006: 3).

In another context, identification may involve the examination of a representation of a person, for example, an image or CCTV sequence. Examples of these various contexts are provided in a number of texts, including Thompson and Black (2007). Regardless of the specific details, Timmermans argues that for identification to be successful in this context, a connection needs to be made between the physical presence of the body and an identity (2006). He notes that a name is a sign of life, not death, and so the implication is that other means of identification are required for the deceased. The myriad identification techniques are usually separated into three categories depending on the strength of identification they provide. Primary techniques, including DNA and fingerprints, are viewed as providing absolute proof of identity. This tenet will be repeatedly tested throughout this book. Secondary techniques are those which are insufficient on their own but adequate when used in combination with other techniques, such as visual inspection and blood group. Tertiary techniques are those which can only really support other primary or secondary

techniques and include personal effects and descriptions (see Thompson & Puxley, 2007, for more detail on this). Ultimately though, because 'people are entangled in multiple bureaucracies during their lives … it is difficult to die anonymously' (Timmermans, 2006: 49).

It is worth noting briefly that decomposition can severely affect the identification process. While it is easy to say that a given identification discipline focusses on the deceased, the biological decay of the body influences the nature and philosophy of the techniques used and the discipline itself. Specific details of the process of decomposition can be found elsewhere (such as in Haglund and Sorg's volume [1997]) but the process involves the cessation of basic cellular functioning, which halts the body's ability to maintain homeostasis. Thus the enzymes from within the body's cells and the bacteria in the gut can spread around the soft tissues of the body, causing colour change, swelling and ultimately disruption of the integrity of the body. Timings for this vary according to environmental conditions. This natural process is common to us all, unless certain factors (such as freezing, embalming and so on) are applied to the body to slow down this process. As will be seen in the subsequent chapters of this book, a great many facets of identification and identity depend on or originate from these soft tissues, and thus their destruction has a significant role to play in many settings.

There are, of course, other non-criminal modern contexts in which human identification is a necessity, such as when dealing with mortgages and wills, but identification here tends not to focus on the body, but rather on documentation and paperwork. In daily life, people are required to categorise and identify themselves on a regular basis for bureaucratic purposes. Sex, ethnicity and age are the most frequently requested aspects of identity ascription (see following chapters for greater exploration of this).

Like those working in the forensic sphere, anthropologists are concerned with both the living and the dead. By contrast, the anthropological literature has drawn a great deal of attention to the culturally constructed nature of bodies, as well as cross-cultural variation in identity construction. In terms of human identification, anthropologists of living societies need to make interpretations concerning age, sex and status of their subjects, even in circumstances in which these have little meaning for the society under observation. These interpretations are located within their own Western experiences of the terms and, as in a forensic context, individuals are identified as such primarily on the basis of physical appearance.

Biological anthropologists and human bioarchaeologists are also concerned with both human identification and identity, this time interpreted from the physical human remains of our ancestors. Most often the skeleton is the primary

unit of analysis, with scientists using both macroscopic methods and biomolecular techniques to study it (see Chapters 5 and 6). The techniques used in the study of the ancient dead are not dissimilar to those used by forensic anthropologists for assessing the more recently deceased. The techniques themselves are produced from observing variation in physical features amongst 'known' populations, for which historical documents relating to age, sex, class and ethnicity are available, sometimes also referred to as 'identified skeletal collections'. The observed biological variation in these known populations is described statistically and an identification technique is produced and then applied to the ancient skeletal remains. This sounds straightforward, but, as many archaeologists have observed previously, it involves a whole host of assumptions concerning the universality of these physical features. Bioarchaeologists are well aware that the skeleton is very far from universal; indeed it is the skeleton's very plasticity that is harnessed to infer information about past living environments. Yet, in terms of the basic categories of identification, such concerns regarding the uniformitarian assumptions inherent in many techniques are generally brushed aside (see Chapter 5).

1.2.2 *Biometric identification*

Biometric identification is a rapidly developing field, and industry and politicians are keen to rapidly utilise this seemingly efficient and cost-effective identification solution to solve issues of national security and identity verification. Now, fingerprints are not reserved for criminals but are required to facilitate travel, or, as in the United States, in order to receive welfare. Schoolchildren provide fingerprints in schools, while iris scans, voice recognition software and so forth are all used to identify people in a variety of situations. Despite the controversy around the collection and use of biometric information from human bodies it is important to remember that 'biometrics are unique identifiers but they are not secrets' (Schneiner, 1999). Indeed, most of the key biometric features are clearly visible to all. As has just been noted, the development of this field is hotly debated. Thurtle and Mitchell express their concern at the idea that sees 'data made flesh', which they argue is a troubling trend in science in which bodies are losing out to abstract notions of information (2004: 3). Within the biometric community, the phrase 'identity management' has been adopted (Fisher, 2008), likely to reflect the fact that you are no longer passively carrying your uniqueness, but that you need to deploy and maintain it too. A failure in our identity management may lead to another person using our identity. 'Identity theft' and 'identity fraud' are becoming an increasing concern with a recent report showing that 61 per cent of Britons were concerned about identity fraud (Fisher, 2008). It is important

that measures are taken to reduce such concerns and threats. Fisher states that 'stronger, robust authentication is crucial in a joined up world where information is shared' (2008: 9). In other words, the use of an increasing range of biometric identifiers from the body.

1.3 Boundaries of identity and identification

That the body and mind/soul are fundamentally distinct entities has ancient antecedents in Western medicine with traces as far back as Hippocrates and Aristotle (Scheper-Hughes & Lock, 1987). It was not until the sixteenth century that Descartes articulated the mind–body separation so distinctly: *Cogito, ergo sum*: I think therefore I am. As discussed by numerous authors, this Cartesian separation has shaped the conception and approach of Western scientific tradition to the body, which has been conceived of as almost entirely divorced from the mind and emotions. Within this framework the body becomes ahistorical and acultural, so that it is overwhelmingly perceived as a universal, fixed, purely physiological entity. In a series of papers, Nancy Krieger notes that in clinical medicine aspects of identity such as 'age', 'sex/gender' and 'race/ethnicity' are the holy triumvirates of epidemiological studies. Incidences of infectious, cardiovascular and other diseases are all looked at in relation to these social variables. The categories themselves are, however, rarely theorised or problematised and the theoretical underpinning of this choice of categories is almost never developed. Socio-economic status is, of course, another prime variable in health statistics, with poor health across a number of disease categories strongly associated with lower-class groups (Krieger & Fee, 1996; Krieger, 2003, 2005; Krieger & Davy Smith, 2004).

That there is an objective truth to be uncovered, recorded and 'mapped' about the human form from the DNA, bones and external morphology is the source of considerable scientific endeavour. Indeed, some sciences of the body have taken an alarmingly deterministic turn, seeking to reduce individuals and societies to the sum of their DNA (see Lewontin, 1991) or biometric proportions. Eugenistic terms such as 'gene therapy' and 'designer babies' are infiltrating popular consciousness and justifications are framed in terms of 'informed choice' (Chapter 6). Furthermore, in the face of 'threats to national security', there has been an increasing drive towards biometric technologies which seek to reduce aspects of the human form to numerical sequences (Kruger et al., 2008). What could be more objective or immutable than a numerical 'code'? Within this epistemology the body is absolute and knowable. This has prompted Kruger et al. to argue that 'the digital extraction of information from body parts, fragments and substances facilitates a de-personalization or de-humanization effect that