



# Nature and Sociology

Tim Newton

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*Tim Newton*



E2008001469



**Routledge**  
Taylor & Francis Group

LONDON AND NEW YORK

First published 2007  
by Routledge  
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN  
Simultaneously published in the USA and Canada  
by Routledge  
270 Madison Ave, New York, NY 10016

*Routledge is an imprint of the Taylor & Francis Group, an informa business*

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Typeset in Galliard by  
Integra Software Services Pvt. Ltd, Pondicherry, India  
Printed and bound in Great Britain by  
Antony Rowe Ltd, Chippenham, Wiltshire

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*British Library Cataloguing in Publication Data*  
A catalogue record for this book is available from the British Library

*Library of Congress Cataloging in Publication Data*  
Newton, Tim.

Nature and sociology / Tim Newton.

p. cm.

ISBN 978-0-415-36684-7 (hard cover)--

ISBN 978-0-415-36683-0 (paper cover)

1. Nature--Social aspects. 2. Geographical perception. 3. Nature and nurture. 4. Human beings--Effect of environment on 5. Sociology--Philosophy. 6. Philosophy of nature. 7. Sociobiology. 8. Body, Human--Social aspects. 9. Human genome. I. Title.

HM856.N48 2007

304.2--dc22

2007001560

ISBN 978-041536684-7 (hbk)

ISBN 978-041536683-0 (pbk)

ISBN 978-020301945-0 (ebk)

## NATURE AND SOCIOLOGY

Nature has become increasingly central to social thinking. From the social implications of environmental degradation to the plethora of issues raised by biotechnology, genomics, neuroscience and health, the 'natural' world is increasingly difficult to ignore for sociologists and social scientists. In addition to a wide-ranging treatment of this field, this ground-breaking text presents fresh perspectives that challenge the way we think about the relationship between 'time', 'nature' and 'society'.

Although the natural and social are inevitably intertwined, Tim Newton argues that we should be open to the possibility of difference in our preception of them. In so doing, he contests accepted tenets, such as an overriding need for anti-dualism, and underscores the limitations of current approaches such as social constructionism and critical realism. In addition, he engages with the burgeoning debates on new genetics and neuroscience, takes the material world and human biology seriously, and addresses the issues of interdisciplinarity that are likely to arise in any longer term attempt to work across the social and natural world.

*Nature and Sociology* will be of great interest to students of a variety of disciplines including Sociology, Psychology, Philosophy and Human Geography, Social and Biological Antropology, and the Life and Physical Sciences.

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## ACKNOWLEDGEMENTS

I would like to thank all those who commented on this book, or on earlier related papers, including Phil Sutton, Ian Burkitt, Martin Wood, Chris Drummond, Robin Canniford and Kate Soper. Chapter 2 contains a small amount of material that was previously published as ‘Power, subjectivity and British industrial and organizational sociology: The relevance of the work of Norbert Elias’, in *Sociology*, 33 (2): 411–440. Similarly, Chapters 2–6 includes occasional passages that were published in ‘Crossing the great divide: Time, nature and the social’, in *Sociology*, 37 (3): 433–457. In addition, part of Chapter 8 is based on a previously published article, ‘Truly embodied sociology: Marrying the social and the biological?’, that appeared in *The Sociological Review*, 51 (1): 20–42. My thanks to both journals, and their editors, for permission to reprint material from these articles here.

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# 1

## RECOVERING NATURE

In some ways this is a perverse book. Ostensibly it forms part of the growing sociological attention to the relationship between 'nature' and 'society'. Yet its argument swims against the tide of current conjecture in this field. First, contrary to present fashions, it asks whether there remain differences in our perception of the natural and social domain. Second, in spite of sympathising with the desire to interrelate the social and natural sciences, the ensuing argument will continually point to the difficulty of this enterprise.

There are reasons for this perversity. One of these derives from the conventional desire to resist dominant ways of thinking lest they become sufficiently overbearing to deny the possibility of difference. Another hails from the need to underscore the constraints of any exercise if one is to pursue its realisation. In what follows, I wish to explore such differences and constraints through attention to sociological debate concerning the human body, health and the natural environment as well as the 'designs' on our bodies that are represented by new genetics and genomics.

It might be argued that sociologists should still not engage with the natural world. This argument makes sense to the extent that it is difficult to work across the natural and social domain. In addition, there remain reasons to be wary of accounts of ourselves that mix biology and sociology. For instance, sociologists have traditionally been hostile to biological accounts of gender because of the danger that they would legitimate patriarchy and androcentrism as a 'natural and normal' state of affairs (Birke, 1999). Similarly, 'bio-medical' models of health have reproduced accounts of human life which, in spite of a range of reports, still tend to downplay concerns with social inequality and material deprivation (Townsend and Davidson, 1980; Williams and Bendelow, 1998). These anxieties about biologism have been sharpened by projects such as socio-biology and evolutionary psychology. Within the latter, the entire complexity of the social and natural world can be reduced to the desire of a 'gene' or a 'meme' on the basis of formulaic models of natural selection that, at worst, rely on a 'mixture of the stereotypic, the outrageous and the banal' (Dupré, 2001: 54). Concerns about the biological realm have also been buttressed by legacies that have maintained the 'Great Divide' between nature and society. Even where there has been an

emphasis on materiality and life, as with Marxism, it can appear that ‘with some notable exceptions, . . . “Western Marxism” . . . has been as firmly committed to a dualistic *opposition* between nature and culture as has its “bourgeois” counterpart’ (Benton, 1991: 7). The dangers of addressing biology within a social context are also underlined by the difficulty of inventing a term for this terrain which is not already tainted by association, such as ‘sociobiology’, the ‘biosocial’ or ‘sociological biology’ (Shilling, 2003).

With this formidable inheritance, it can seem remarkable that anyone has attempted to erode the partition between sociology and nature. Yet over the past two decades there has been a range of such endeavour. This includes work which has campaigned for the overall project (e.g. Benton, 1991, 2003; Shilling, 1993/2003; Jenkins, 2002), as well as that which has broadened our understanding of the sociology of health and emotion (e.g. Freund, 1990; Williams, 2003a), and that which has strived to reconcile human biology with feminism (e.g. Birke, 1986, 1999; Wilson, 2004). In addition, writers have tried to re-insert a ‘biological body’ into the sociology of the body by furthering ‘a realignment between sociology and biology’ (Shilling, 1993: 104), and re-emphasised the material world by treating nature as though ‘it did matter’ (Murphy, 1994a, 1997; Collins, 1996; Murdoch, 2001), or used the biological frailty of embodiment as a basis to defend a foundational ontology of human rights (Turner and Rojek, 2001). In spite of these varied projects, there still remains more than a grain of truth in Richard Jenkins comment that ‘for the moment . . . biology and nature remain almost dirty words within sociology’ (2002: 113). Yet a failure to enter the biological terrain represents an implicit acceptance of the ‘Great Divide’ between nature and society and its assumption that to ‘the natural scientist [belong] the things, to the sociologists the remainder, that is, the humans’ (Callon and Latour, 1992: 357).

In this book, I shall explore the argument which suggests that ‘nature’ and its materiality should be incorporated as legitimate aspects of sociological inquiry. Yet at the same time, I will question whether it is possible to construct a ‘non-reductionist . . . *theoretical integration* of the human and life-sciences’ (Benton, 1991: 21, added emphasis). To put this another way, circling this realm is a range of epistemological debate, of which the most prominent has been that between realists, and critical realists, and ‘strict’ and ‘soft’ social constructionists. In approaching this extended, and frequently fractious, debate, I shall be guided by a couple of key thoughts. First, it is still not clear that ‘the observer [can] abandon all a priori distinctions between natural and social events’ (Callon, 1986: 313). Second, to understand the natural and social domain, it can be helpful to address our *perception* of natural and social temporality.

### Forgotten bodies

Human biology can eschew sociological attention because it is such a routine aspect of everyday life. Though we are entirely dependent on our bodies, we



tend to forget that ‘without this body, with this tongue or these ears, you could neither speak nor hear another’s voice’ (Abram, 1997: 45). Examining the relation between human biology and sociality therefore requires a re-examination of the taken for granted (Leder, 1990; Shilling, 2003; Gimlin, 2006). For instance, we tend to overlook everyday aspects of our biological selves such as the significance of the human hand. As Bendelow and Williams note:

the human hand... is a remarkable feat of evolutionary engineering: a single tool which manipulates an astonishing variety of objects of different shapes, weights and sizes, each of which needs a precise combination of muscle tensions that mould it into the right shape for the “task in hand”.

(1998: 18)

Ian Burkitt argues that tools are also critical to human communication and evolution (Washburn, 1960). They represent ‘artifacts with a symbolic significance’ (Burkitt, 1999: 40) as reflected in the intricacy of distinctive human activities such as writing, painting, designing, carving, sewing, cooking, and so on. Yet in spite of the social significance of our hands, and the tools they manipulate, they can be so quotidian that we fail to recognise them. Drew Leder reports psychological research which suggests that 90 per cent of people are unable to recognise a picture of their own hands from a small series of such pictures. As Leder observes, the hand represents ‘the organ with which I perform my labor, eat my food, caress my loved ones, yet remains a stranger to me’ (1990: 1).

Like the hand, the human face allows for considerable complexity and subtlety in communication. Stephen Mennell notes that in comparison to humans ‘even the apes have relatively rigid, immobile faces’ (1989: 205). Such facial complexity allows for extraordinary characteristics such as the human smile. Except in an evolutionary sense, the smile remains an *extra-discursive* aspect of our biology yet one that is *central* to social discourse (Shilling, 2003). It is a leading actor in our non-verbal repertoire and one that enables considerable communicative subtlety and ‘a rich variety of shades of feeling’ (Elias, 1987a: 359). As Elias notes, the smile ‘can be a hesitant, a withdrawn, a broad, a triumphant, a supercilious and even a hostile smile’ (1987a: 359). A more graphic illustration of this subtlety is provided by the musings of a character in one of A.L. Kennedy’s short stories. As this character observes:

You see, there are many types of smile. Everyone is familiar with the insincere *screwyoureally* sort, the *I’m dying but keeping it in*, the *Jesus I’m scared and I haven’t a clue what my face is up to*... But there is a special smile also, one that can be neither prepared, not simulated, and which convinces me of God’s essential benevolence: it has the effect of unquestioning undiluted love and is entirely beautiful.

(2004: 25)

One does not have to share this character's feelings about celestial beneficence in order to relate to this part of our common, and biologically based, humanity. If we follow some life scientists, the distinction between A.L. Kennedy's 'insincere' and 'entirely beautiful' smile also appears closely interwoven with the our brain's neurology. V.S. Ramachandran and Sandra Blakeslee suggest that the sincere 'spontaneous smile is produced by the basal ganglia, clusters of cells found between the brains higher cortex (where thinking and planning take place) and the evolutionary older thalamus' (1998: 13). In contrast, they argue that an insincere smile represents an interaction between the 'higher thinking centers in the brain' and the 'motor cortex . . . which specializes in producing *voluntary* skilled movements' (1998: 14, added emphasis). Yet since smiling 'involves the careful orchestration of dozens of tiny muscles' (1998: 14), it seems that the motor cortex is not up to the job. If we accept such neurological conjecture, an insincere smile can only remain 'forced, tight, unnatural' (1998: 14).

These neurological niceties are also significant to intersubjective machineries of power. This is epitomised by Elias's (1994) study of absolutist royal courts, such as that of Louis XIV. In this work, Elias showed the importance of our human biological make-up to skilled socio-political performance. Drawing on La Bruyère, he noted that the 'accomplished courtier is master of his gestures, his eyes, his face; he is deep and impenetrable; he can dissemble when he is doing an ill turn, *smile on his enemies*' (La Bruyère, 1890: 112, added emphasis, cited, though with a different translation, in Elias, 1994: 476). This oft-cited Eliasian quotation shows how human biology is not just a matter of physiological functioning, or the psychology of interpersonal communication. It is also a means by which we play out power relations. Elias's attention to this machinery of power reminds us how smiling, like other bodily repertoires, forms part of a complex of human emotions that resonate simultaneously through both our bodies and our culture. On the one hand, our emotions are interwoven with our culture, as revealed in the variance of emotional vocabulary across different cultures (Lutz, 1988). On the other hand, emotion is a biologically embodied experience. As William Connolly notes, our affective

energies find symptomatic expression in the timbre of our voices, the calmness or intensity of our gestures, our facial expressions, the flush of our faces, the rate of our heartbeats, the receptivity, tightness or sweatiness of our skin, and the relaxation or turmoil in our guts.

(2002: 76)

In this manner, our ubiquitous emotions illustrate the intertwining of human biology and culture: emotion represents a biosocial endowment that is central to the expression of human culture (Elias, 1991a).

Yet just as we take our emotional repertoire for granted, so we also tend to forget that our ability to sense anything about our world relies on complex biological interaction, such as that between our sense organs and our brain.

A well-known example of this interaction was provided in 1668 by Edme Mariotte's illustration of the perceptual 'blind spot'. The blind spot corresponds to the area where the optic nerve enters the eye. Since we have no photoreceptor cells at this point, there is a blind spot in our eye's perception. However we are not normally aware of this blind spot, or *scotoma*, because our brain appears to 'fill in' the missing detail with information from our other eye. The import of Mariotte's (1668) initial experiment can be easily demonstrated. Take a look at the letters below. Then move this book close to your eyes, cover your right eye and focus the left eye on the 'X'. Keeping your left eye firmly focused on the X, slowly move the book away from you until the O disappears. Following Mariotte (1668), you have discovered your left eye's blind spot.

O

X

Although you may have tried this simple experiment at school, we tend to forget its central implication, namely that our awareness of the world is reliant on intricate biological interaction. It seems that we do not see blind spots because our brain, eye and optic nerve continually interact so as to compensate for our loss of vision. The efficacy of such perceptual processes means that we need rarely stop to question their operations. Nevertheless the ability to see a smile, or to more generally socially interact, appears reliant on the evolution of this complex biology of perception.

According to Nick Crossley, many other aspects of human communication are also deeply social yet are as much a result of our inherited biological capabilities as our social learning. Crossley quotes Meltzoff and Moore's (1983) observation that 'only 42 *minutes* after birth an infant will respond to an adult protrusion of the tongue with a similar gesture – long before they have grasped the concept "tongue" or had time to realize that both they and the parent have one' (Crossley, 1997: 27, original emphasis). This pre-linguistic intercorporeality appears central to the learning of sociality in early childhood development. At the same time, it is part of a more general pre-conscious 'conversation of gestures' between people, as observed when we simultaneously yawn or mirror each other's non-verbal behaviour (Mead, 1934; Merleau-Ponty, 1962, 1968; Goffman, 1971). Such examples are more than just practical consciousness (Giddens, 1984): they suggest that 'a pre-given and primordial "intercorporeality" '(Crossley, 1997: 28) is central to how we both learn and perform human sociality. As with other human characteristics such as the correlation between the human hand and tool use, these facets define the particularities of human social life. In this context, it can seem bizarre that part of the 'sociological faith' is the 'belief that biology and physiology have little or no role to play in explaining the "social" or "cultural" phenomena which interest sociologists' (Jenkins, 2002: 112).

It is also easy to forget how biology informs one of the most distinguishing facets of human beings, namely our capacity for language. Human language and talk 'brings into play various organic elements; not only the larynx, but the mouth

and lips, and the overall motricity of the face' (Deleuze and Guattari, 1988:61). In short, the spoken language is a bodily performance (Merleau-Ponty, 1962). It is not just that we need a tongue and larynx, etc, but that we 'taste' words as they 'roll off' our tongues and resonate through our bodies (Abram, 1997: 75). At the same time, this biologically enabled ability has allowed humans to move beyond the limitations of biology and ensure that our evolution is socio-culturally based (Burkitt, 1999). Our biology does not pre-programme our behaviour because our capacity for language means that we can operate well outside of the programmatic. In other words, as with our technological skill, our remarkable linguistic abilities encourage the plasticity which characterises human behaviour. As Gilles Deleuze and Félix Guattari note, this is because the linguistic 'form of expression is independent of substance' (1988: 62). Or as Elias (1991a) stresses, the peculiarities of our biology mean that we are not defined by it. This means that:

in the case of human societies a great deal of social change can occur such as that from tribe to empire without any biological change . . . Languages enable humans to transmit knowledge from one generation to another and thus make it possible for human knowledge to grow.

(Elias, 1991a: 32)

The remarkable range of symbolisation that occurs in human language is not matched in *quite* the same way in other animal species,<sup>1</sup> and neither is there the same linguistically based capacity for abstract thought and its cumulative development. Together with our extraordinary manipulation of tools, this allows for a distinctive openness in the way we interrelate with our world, as well as the ability to convey the knowledge so gained across generations (Elias, 1991a). In this sense, we can transcend time and space. Nevertheless, this transcendence remains completely interwoven with our biology. Human plasticity arises because 'human beings are *biologically capable* of changing the manner of their social life' (Elias, 1991a: 36, added emphasis). It is this biological capacity that has enabled remarkable social change in human societies, such as the move within a single millennium from tribalism to feudalism, monarchy, urban-industrialism, capitalism and global capitalism.

Together these arguments reinforce the proposition that sociologists should attend to the materiality and biology of the human body, since they suggest that such corporeality is deeply implicated in the social fabric. It is this very close interweaving between our social and biological reality that allows us to take it for granted. Another example of the commonplace nature of this relationship is found in the fact the human race has two genders with a roughly equal divide between them: other things being equal, slightly more boys than girls are born (an androcentrically defined 'sex ratio' of 105, or 5 per cent more boys than girls; Heer, 1975; Goodkind, 1999). Yet the social significance of human gender balance receives *comparatively* little attention. On the one hand, feminist study

has enabled a wide range of work on the sociology of gender. On the other hand, there is little concern with the arithmetic of gender balance, except in relation to the politics of female infanticide and prenatal sex selection (see p. 11). However different social relations might pertain if this balance were markedly uneven. In addition, the achievement of an even proportion between the sexes remains a remarkable achievement since it represents a *global* social phenomenon that is somehow produced by *individual* mating. All those 'private' fertilisations of ova by sperm add up to an incredibly balanced 'public' global arithmetic, even though this collective social accounting is dependent on the interaction between 'open' heterosexuality and 'open' biological processes (the meeting of an ova with an XX or XY chromosome). Although there are indications that gender balance in some animals responds to environmental change (e.g. Clutton-Brock and Iason, 1986; West and Sheldon, 2002), or even in relation to human personality (Grant, 1998) and human socio-political context (Cain, 1993),<sup>2</sup> it is extraordinary that a combination of social and biological process achieves such a balance in the first place, especially when it occurs across billions of people. In sum, biological bodies have 'conversations' that are not only independent of the conscious wishes and discourse of individuals, but also produce astonishing collective social arithmetic at a global level. If one were just reliant on human discourse, only a dictatorial control of the sex of unborn children could produce such globally *balanced* arithmetic, and yet it happens 'naturally' through a collective social and biological process. The paradox of this arithmetic is that it is highly socially significant and yet *extra-discursive* in much of its operation.

These quotidian examples of the close relationship between our social and biological selves reinforce Ted Benton's call for a 're-alignment of the human social sciences with the life-sciences' (Benton, 1991: 25) and Michael Bury's call 'to rethink the relationship between sociology and the biological sciences' (1997: 199). If nothing else, they suggest that sociologists should make greater efforts to cross the 'Great Divide' since they imply that to ignore our biology is to circumscribe our understanding of the social.

### The politics of nature

'Nature' has long been an ambiguous and dangerous term because of the various ways it has been used to define and enrol us (Soper, 1995). On the one hand, it has been co-opted in order to abuse and exploit, as witnessed in attempts to define the 'natural' superiority of Caucasians, the subjugation of women through their assignment to their 'naturally' subordinate position, or the repression of lower social classes through the erection of a 'natural' social hierarchy or caste system. And lest we think of this as history, there remain numerous contemporary examples of the use of nature in the service of subjugation. For instance, labour market research suggests that ethnicity, gender, sexuality, age, and disability are still routinely used in order to limit access to work. In this manner, it is easy to see nature as an agent of reactionary cultural desire. Yet on the other hand, nature

is also increasingly perceived as the subject of cultural abuse through activities such as the degradation of the natural environment, or its subversion through techniques such as prenatal sex selection. Nature can therefore appear Janus-faced, repressed and repressor. It is not surprising therefore that 'the concept of the natural continues to carry enormous moral weight and emotional power' (Sagoff, 2005: 74).

In consequence, 'nature' has strong political connotations, as is witnessed in sociological debate about the body, health and the natural environment (Benton, 1991; Soper, 1995; Yearley, 1996; Dickens, 1996, 2001; Goldblatt, 1996; Murphy, 1997; Adam, 1998; Shilling, 2003). Although much of the discussion of this book will be concerned with understanding the social and natural domain, its argument will periodically reference their political consequence. In order to introduce such political issues to the less informed, three exemplars will now be considered: the politics of environmental degradation; health and the human body; gender and pre-natal sex selection.

### Environmental degradation

It is difficult to contemplate nature without considering its current degradation. On the one hand, some writers still question the significance of environmental risks (e.g. Lomborg, 2001). On the other, there are concerns that changes to the environment may be more pronounced than previously anticipated. For instance, the UN's Intergovernmental Panel on Climate Change has raised its forecast for global warming from 3°C to the possibility of almost 6°C by 2100 (Houghton *et al.*, 2001). In addition, environmental threats such as global warming occasion a variety of risk scenarios. These include the flooding of densely populated land, as in Bangladesh and the Nile delta, the 'disappearance' of Pacific islands, and the loss of low-lying land in Western countries such as the Netherlands and the Mississippi delta (Houghton, 2004). There are also concerns that global warming will exacerbate water shortages and falling crop yields in developing countries, and accelerate desertification in areas such as the Southern Mediterranean, North and Southern Africa and the Sahel. More controversial arguments include the suggestion that global warming will raise some surface sea level temperatures beyond 26.5°C, and as a consequence, occasion a rapidity of typhoons, tropical cyclones and hurricanes. In other areas of the world, there is the possibility that the melting of the North polar ice caps will cause sufficient cooling of Atlantic waters to 'turn off' the 'conveyor belt' that brings the warm air and water of the Gulf Stream to North and West Europe. Though considerable hype can surround such doom-laden scenarios, whether through the alarmist briefings of green pressure groups or Hollywood blockbusters such as *The Day After Tomorrow*, this does not detract from their significance. As Peter Dickens argues, 'While the apocalyptic visions of irreversible environmental degradation may still turn out to be over-stated there is still plenty of evidence of widespread environmental destruction' (1996: 27). In particular, the heavily mediated debate about global

warming can detract from other environmental concerns such as species extinction and loss of bio-diversity, soil degradation and depletion of the ozone layer, air and water pollution, toxic waste, nuclear radiation, and so on. In addition, there are concerns relating to nitrogen emissions caused by fertilisers and fossil fuels, with some environmental scientists suggesting that nitrogen emissions are more important than carbon emissions (because high emissions can occasion de-oxygenation of rivers and lakes).

Surrounding all these debates are anxieties about the geopolitics of energy. For example, there are predictions that we will experience short-falls in oil production at some time between 2007 and 2025 from organisations as various as the Peak Oil Association, Greenpeace and Shell. Although there is considerable debate and contestation in this area (e.g. see Odell, 2004), there remains concern that 'the tip over point' – where oil demand exceeds supply and prices accelerate – will be reached before alternative supplies of energy will be on stream. Such predictions arouse 'Doomsday' fears that have as much to do with the possibility of an entrenched global recession as the pursuit of a green agenda.

Whether these risks should be seen as underplayed or unnecessarily cautious (Furedi, 2005), they point to the way in which the relationship between human beings and nature remains both contentious and central to human society. At the same time, they illustrate the difficulty of regulating the relationship between human beings and the natural environment. For example, the ability to reach global ecological agreements has had a chequered career, most notably in the difficulties experienced in getting the USA to ratify the Kyoto protocol. In addition, some of those who are signatories to Kyoto are pursuing environmental policies that are at odds with their supposed commitments. For instance, the recent UK government's White Paper, *The Future of Aviation*, envisages increases in British aviation carbon dioxide emissions which 'even by 2010... would entirely negate the reductions achieved by the Government under the Kyoto Protocol...' (House of Commons Environmental Audit Committee, 2003: 9; see Newton, 2005). Such observations raise doubts as to whether global environmental agreements can be adequately policed, whether in the 'North' or the 'South' (Yearley, 1996; Gray, 1999).

The history of environmental degradation illustrates the continuing significance of nature for all life forms on this planet (Goldblatt, 1996). It reminds us that human beings appear closely dependent on, and interdependent with, the natural world (Elias, 1991a). In addition, it points to the gross inequalities between people in their access to the world's resources since, for many people, the need to degrade the natural environment is interrelated with the threat of famine, disease and poverty (Dryzek, 1997; Banerjee, 2003). Yet the sociology of the natural environment is not the only arena in which human biosociality is interwoven with social inequality. As a now lengthy tradition in sociology reminds us, human bodies are an expression of a variety of power relations (Bourdieu, 1989; Elias, 1994).

### Health and the body

There is an unusual level of agreement that health inequalities persist in western countries such as Britain, 'whether measured in terms of mortality, life expectancy or health status' (Acheson, 1998: 10). Put bluntly, it would appear that if you are from a lower social class in the UK, you are more likely to die in infancy, and if you survive, you will probably have a significantly shorter life, and suffer greater physical and mental ill-health during that life (Acheson, 1998; Shaw *et al.*, 1999, 2002). As Shaw *et al.*, note, social class differences in health have 'real, lethal meaning for large groups of people living in Britain today' (1999: 107, cited in Williams, 2003a: 47). There is also evidence that indicates that countries which have lower income inequality exhibit lower class-related differences in health, such as in Sweden and Japan (Wilkinson, 1996; Williams, 2003a). In addition, there are suggestions that 'health class' differences have been exacerbated by neo-liberalist economics and the decline of the welfare state (Coburn, 2000).

In sum, health remains a fiercely political issue. It is therefore not surprising that sociologists have examined its politics by attending to issues of class, as well as those of gender, ethnicity and sexuality, and the broader ideology of 'medicalization'. Early commentators suggested that the latter ideology provided a convenient means of social control (Zola, 1972; Illich, 1975), although this thesis was subject to later critique on the grounds that it overplayed the passivity of patients (Taussig, 1980) and the complex processes through which health is managed (Conrad, 1992). Foucauldian analyses furthered such critique to the extent that they questioned simple images of medicalised social control and emphasised the ways in which people bought into new health-related subjectivities, such as those relating to the 'management' of 'psychological stress' (Newton, 1995) or the need for fitness and diet regimes and the self-management of health (Lupton, 1995). At the same time, some writers feared that the net effect of this sociological critique, particularly in its latter Foucauldian and post-structural form, was to lose sight of biology (Bury, 1995) and the significant role which medicine has played in 'improvements in the quality of life of the Western population over the past century' (Williams, 2003a: 20). In addition, there remain concerns that sociological critique ignores the complexity and open-endedness of medical practice (Kelly and Field, 1994, 1996) and the fact that 'medicine itself is not composed of a body of like-minded individuals' (Williams, 2003a: 20).

Some writers have suggested that the politics of health is also mediated by psychosocial processes. For instance, Wilkinson suggests that:

The poor suffer psychosocial effects of deprivation as well as its direct material effects. Indeed it is important to recognise that as well as the greatest material deprivation, those at the bottom of the social hierarchy also suffer the greatest social, psychological and emotional deprivation,



and this may well have a greater impact than the more direct effects of material deprivation.

(1996: 176, cited in Williams, 2003a: 48)

Though the ‘psychosocial’ refers to a multitude of processes (Elstad, 1998) whose influence is contested (Carroll *et al.*, 1996), there is nevertheless growing interest in the socio-political pathways through which the social context of people’s lives becomes translated into health outcomes. For instance, Peter Freund (1990) draws on Arlie Hochschild (1983) in order to argue that the social status of individuals affects their physiological functioning, which in turn influences their health (see Chapter 8). As Williams comments on Freund, ‘the implications of his argument seem to suggest . . . that society affects physiological reactivity deep within the recesses of the human body . . .’ (2003a: 51).

These claims provide further support for the argument that our social understanding is foreshortened if it ignores biological issues. If we follow Freund, we can only understand the politics of health by attending to the biological pathways through which social inequality becomes translated into health inequality. In effect, such argument reinforces the position of those who stress that ‘for far too long, the biological has been dismissed as irrelevant to the sociological enterprise’ (Williams and Bendelow, 1998: 211).

### Gender and prenatal sex selection

Gender forms a central part of any politics of nature since discourses about nature have long been deployed as a means to define gender, especially as this relates to the confinement and repression of women (e.g. Soper, 1995, Birke; 1999; Wilson, 2004). A dramatic illustration of this argument is provided by biological techniques that provide a means to eliminate rather than just confine or repress. Prenatal sex selection (PSS) provides the technological ability to determine the sex of the unborn child. It provides further illustration of the significance of ‘nature’ for our social and political lives since the predominant fear with PSS is that it will be used to deny girls a right to life through ‘female “foeticide”’ (Brown and Webster, 2004: 59). In addition, the politics of PSS also demonstrate tensions between the rhetoric of ‘consumer choice’ and the ethical concern for human rights. On the one hand, there are clinicians and life scientists who argue in favour of the parents’ right to choose the sex of their children. On the other hand, other commentators suggest that PSS further enables prenatal female infanticide, particularly in patriarchal societies. Authors such as Kusum argue that PSS in India enforces discrimination against women not just from the ‘cradle to the grave’ but ‘now from womb to the grave’ because it is used to favour the birth of boys over girls (1993: 163). Others suggest that PSS has been part of ‘massive societal change’ in countries such as Korea and China (Stephen, 2000: 301). Daniel Goodkind argues that ‘recent evidence from East Asia suggests that parents use prenatal sex testing to selectively abort female