

Chapter

2

The historical context



The historical context

- 2.1 The literal meaning of the term eugenics is 'well born'. It refers to the doctrine that humanity can be improved by selective breeding, that is, by encouraging those with desirable traits to reproduce or discouraging those with undesirable traits from doing so. The eugenic movement is relevant to the present considerations of genetics and behaviour because intellectual abilities and behaviour of various kinds were central to most eugenic policies and practices, and the study of behavioural genetics was established by scientists working within the context of the eugenics movement. This history remains part of what underlies many of the anxieties expressed today among professionals and members of the public towards work on genetics and intellectual abilities and other behavioural traits. Current work in behavioural genetics has been described as 'the second of two eras in which the science of heredity has promised to offer great benefits for mankind', making it 'inevitable that today's genetics proceeds in the shadow of eugenics.'¹ Many of the respondents to the Working Party's public consultation made links of various kinds between research in behavioural genetics and eugenics (see Box 2.1).²

Box 2.1: Concerns about eugenics expressed by respondents to the public consultation

'The notion that behavioural traits are passed from one generation to another, "in the blood", has been common currency for a very long time. It has been used to justify racism, persecution and genocide, it has been used to stereotype individuals, and it has been used to proclaim the superiority of an individual or group over others.'

British Psychological Society

'Public health policy in the context of genetics is frequently described as eugenic ... behavioural genetics will, on balance, be contrary to the public interest, precisely because it may lead to reduced acceptance and respect for diversity and people with handicap.'

Public Health Genetics Network

'there is a possible scenario of a genetic master race being created, something between Hitler and Brave New World with unpredictable consequences. Even if the techniques are new, the lessons of the Third Reich should not be forgotten.'

Mr Chris Barchard

'The research would seem to be unnecessary since it is concerned with normal people. The main justification of this research would seem to be some form of eugenics which is morally repugnant to most people and so the research should not take place.'

Mrs Gaynor Mitchell

'intelligence, aggression, antisocial behaviour ... The very choice of this list links modern behavioural genetics to its eugenic past, as these were exactly the issues that concerned the early twentieth century eugenicists.'

Professor Steven Rose

¹ Buchanan, A., Brock, D., Daniels, N. & Wikler, D. (2000). *From Chance to Choice: Genetics and Justice*. Cambridge: Cambridge University Press.

² Nuffield Council on Bioethics. (19 March 2001). *Genetics and human behaviour: the ethical context. Public consultation document*. http://www.nuffieldbioethics.org/filelibrary/doc/consultation_document_final.doc (13 Aug 2002).

- 2.2 While selective breeding in plants and animals is as old as agriculture, it became increasingly effective in the nineteenth century. This populated farms in Western Europe, and 'Neoeurope' (temperate North and South America and Australasia) with improved breeds and strains which came to dominate the world food trade, as they still do today. The success of the selective breeding of plants and animals is evidence that both physical and behavioural characteristics can be changed over generations by selection so that the relevant characteristics are, at least to some degree, inherited. Not surprisingly, in a climate in which the breeding of animals was much discussed and visibly effective, debates also included the possibility of the selective breeding of humans, and, consequently, the improvement of the gene pool. This latter is what Francis Galton, in 1883, termed eugenics. His cousin, Charles Darwin, put the argument clearly:

'With savages, the weak in body or mind are soon eliminated, and those that survive commonly exhibit a vigorous state of health. We civilised men, on the other hand, do our utmost to check the process of elimination, we build asylums for the imbecile, the maimed and sick, we institute poor-laws; and our medical men exert their utmost skill to save the life of everyone to the last moment. There is reason to believe that vaccination has preserved those who from a weak constitution would have formerly succumbed to smallpox. No-one who has attended to the breeding of domestic animals will doubt that this must be highly injurious to the race of man. It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race; but excepting in the case of man himself, hardly anyone is so ignorant as to allow his worst animals to breed'.³

- 2.3 The first recorded experiment in the selective breeding of humans took place in John Humphrey Noyes' Perfectionist Community at Oneida in New York State.⁴ Between 1869 and 1879 fifty-eight 'stirpicults'⁵ were born to members of the Community selected on grounds of intelligence, physique and other characteristics. The children were carefully studied and judged to be superior in their physique and intellect.⁶ However, whether this can be attributed to the Community's attention to 'the laws of breeding', or its material prosperity, education and social policies, is another matter.
- 2.4 By the early decades of the twentieth century, eugenic policies and practices were in place in almost all industrialised countries, and some version of eugenic thought was common ground across the political spectrum. Policies and practices varied widely from country to country. Most included positive eugenics, designed to increase fertility among those deemed to be fit, and negative eugenics, designed to reduce or prevent reproduction by those held to be unfit. In Britain the demographic transition, with falling birth rates especially among the middle and upper classes, provided a strong incentive for eugenic policies which included the incarceration of the 'feeble minded' and 'morally incompetent' to segregate them, as well as attempts to increase the birth rate of the middle classes. Following a Royal Commission on the Causes and Control of the Feeble Minded, the 1914 Mental Deficiency Act allowed the compulsory detention of individuals in state institutions to control fertility. The First World War was generally regarded as a eugenic disaster

³ Darwin, C. (1871). *The Descent of Man, and Selection in Relation to Sex*. 2nd ed. London: John Murray. pp. 133–4.

⁴ Carden, M. L. (1998). *Oneida: Utopian Community to Modern Corporation*. Syracuse: Syracuse University Press.

⁵ Stirpiculture is defined as the production of pure races or stocks by careful breeding.

⁶ McGee, A. N. (1891). An experiment in human stirpiculture. *Am. Anthropol.* **4**, 319–29.

because of the particularly high death rate among officers. This aided the promotion of eugenic policies in the 1920s. In Britain and elsewhere, there was a wide consensus that behavioural and personality traits and moral qualities were largely determined by inheritance. This was repeatedly emphasised by eugenic educational programmes, which claimed, particularly in the early years of the movement, that these characteristics were transmitted as Mendelian traits ('like the coat colours of guinea pigs').⁷

- 2.5 In many countries, although not in Britain, programmes of the compulsory sterilisation of the 'unfit' were instituted in the 1920s and 1930s to combat 'racial degeneration' and crime. It is estimated that in the US about 30,000 people were sterilised. In Germany the figure was probably 400,000.⁸ In Nazi Germany there was selective breeding of the 'racially pure', the 'euthanasia' of thousands of children living in institutions, and the killing of adults from families that carried Mendelian conditions such as Huntington's disease. Eugenics had its critics, who argued on moral, political, social and scientific grounds. In Britain, by the 1930s, there was increasing opposition for both social and political reasons and because of the lack of any evidence demonstrating that the characteristics central to the eugenic programmes were inherited to any significant degree.
- 2.6 It is often believed that knowledge of what had occurred in Nazi Germany before and during the Second World War was sufficient to end eugenic policies elsewhere. This is not so. Some countries, including Canada, Sweden and Switzerland, continued sterilisation on eugenic grounds until at least the 1960s.⁹ In many countries, the traditions of political thought, which in a general sense might be regarded as eugenic, have continued in minority politics. Amongst scientists, eugenic ideas continued to have their supporters. For instance, in 1962 an international group of distinguished biologists met at the Ciba Foundation to consider 'Man and his Future'.¹⁰ The meeting was much preoccupied by eugenics:

'The improvement of human genetic quality by eugenic methods would take a great load of suffering and frustration off the shoulders of evolving humanity, and would much increase both enjoyment and efficiency. Let me give one example. The general level of genetic intelligence could theoretically be raised by eugenic selection; and even a slight rise in its average level would give a marked increase in the number of the outstandingly intelligent and capable people needed to run our increasingly complex societies.

How to implement eugenic policy in practice is another matter. The effects of merely encouraging well-endowed individuals to have more children, and vice versa, would be much too slow for modern psychosocial evolution. Eugenics will eventually have to have recourse to methods like multiple artificial insemination by preferred donors of high genetic quality.'¹¹

⁷ A poster published by the American Eugenics Society, 1927.

⁸ Paul, D. B. (1998). *Controlling Human Heredity 1865 to the Present*. Amhurst, NY: Humanity Press.

⁹ It has recently been reported that since 1996, as many as 200,000 indigenous people in Peru have been pressured into being sterilised, as part of a family planning programme run by the government, which offered incentives to those who agreed to be sterilised and threatened to impose fines for reproducing. (Mass sterilisation scandal shocks Peru. *BBC News Online*. 24 July 2002. <http://news.bbc.co.uk/1/hi/world/americas/2148793.stm>).

¹⁰ Wolstanholme, G., editor. (1963). *Man and His Future*. London: Churchill.

¹¹ Wolstanholme, G., editor. (1963). *Man and His Future*. London: Churchill. p. 17 Julian Huxley.

Similarly, geneticist and Nobel Prize winner, Hermann Muller argued that:

‘modern civilization has instituted a negative feedback from cultural progress to genetic progress ... The social devices and the individual persuasion regarding family size advocated by old-style eugenics are inadequate to meet the situation, except in extreme cases of specific defects. For the major problems concerned with qualitative characters, the more effective method and the one that is ultimately more acceptable psychologically, is germinal choice.’¹²

- 2.7 The usual method advocated for ‘germinal choice’ was artificial insemination by selected donors (AID). Others at the meeting doubted whether these methods would be acceptable or would achieve their desired results. Some questioned whether human populations were deteriorating in genetic terms. They pointed out that IQ levels were rising and wondered whether human beings could be trusted to formulate long-term eugenic objectives.¹³ Twenty years later, at the Eugenics Society’s 75th anniversary meeting, which focused on eugenic and ethical aspects of new reproductive and genetic techniques, there was discussion of Robert Graham’s Californian sperm bank of samples taken from Nobel Prize winners. It was suggested that ‘there is a case on eugenic grounds for choosing donors who are above, but not greatly above, the parental level of intelligence.’¹⁴ While the British Eugenics Society lost some support after the Second World War, it continued to attract prominent scientists, including geneticists, to its meetings into the 1980s. Throughout this post-war period the Society advocated voluntary policies using such techniques as contraception, AID, carrier detection of Mendelian diseases and prenatal diagnosis.
- 2.8 The eugenic movement has had a profound effect on the development of clinical genetics in the post-war era, with increasing attempts to separate genetic counselling from eugenic policies. This may be seen, for example, in the emphasis on non-directive counselling in contrast to the provision of advice (and treatment) which characterises other clinical medicine. The educational activities of the eugenics movement may be, in part, responsible for the continuing beliefs that some behavioural characteristics are largely determined by genetic factors.¹⁵
- 2.9 In order to learn from the history of eugenics, there is a need for clarity about exactly what was wrong about past eugenic programmes:

‘For the history of eugenics to be instructive in ensuring social justice with greater knowledge about genes, and perhaps some ability to alter them, the key question is whether ... eugenics was wrong in its very inception. If so, any eugenics programme will be wrong. On the other hand, if the abuses done in the name of eugenics do not necessarily reflect badly on eugenic ideas themselves, then our task will be to ensure that any eugenic interventions of the future avoids these abuses.’¹⁶

¹² Wolstanholme, G., editor. (1963). *Man and His Future*. London: Churchill. p. 261. Muller went on to be associated with the Repository for Germinal Choice, a non-profit sperm bank that solicited donations from Nobel Prize winners and other eminent scientists.

¹³ Wolstanholme, G., editor. (1963). *Man and His Future*. London: Churchill.

¹⁴ Carter, C. O., editor. (1983). *Developments in Human Reproduction and their Eugenic and Ethical Implications. Proceedings of the Nineteenth Annual Symposium of the Eugenics Society*. London: Academic Press.

¹⁵ Paul, D. B. (1998). *Controlling Human Heredity 1865 to the Present*. Amhurst, NY: Humanity Press.

¹⁶ Buchanan, A., Brock, D., Daniels, N. & Wikler, D. (2000). *From Chance to Choice: Genetics and Justice*. Cambridge: Cambridge University Press.

In what they term an 'ethical autopsy' of eugenics, Buchanan *et al* have identified five possible answers to the question: what is wrong with eugenics? We describe these in the paragraphs that follow, drawing largely on the account offered by these authors.

- *Replacement rather than therapy.* Eugenics sought to improve society by causing 'better' people to be conceived, rather than improving the lives, health and well-being of those already born. While eugenic policies are not alone in affecting which individuals may be conceived, many social and economic policies may do that deliberately or inadvertently, eugenics raises questions about what kinds of people should or should not be born. While one may not accept the judgements that were made in the past, to argue that, in principle, such judgement should never be made would be to condemn, among other things, all programmes for prenatal screening and diagnosis for serious medical conditions.
- *The pluralism of values and our status as designers.* Eugenic programmes are criticised for promoting a particular conception of human perfection and for failing to appreciate the essential plurality of values and ideals of human excellence. In practice, the usual eugenic ideal was people like the eugenicists themselves. Buchanan *et al* suggest that eugenicists should not be faulted for favouring individuals with high intelligence, or other such traits, but rather for the beliefs and attitudes that accompanied such elements in their programme. For example, crime and unemployment were thought to be the result of low intelligence, and people of low intellectual ability were considered of little value to themselves or others. The pluralism of ideals and values already raises difficult questions with regard to selection against serious disease: these problems are heightened by the potential selection and manipulation of behavioural traits and characteristics about the value of which there is even less consensus. Jonathan Glover has argued that the barbarous history of the twentieth century makes the improvement of human nature desirable.¹⁷ However, a counter-argument might suggest that some of the worst policies of the twentieth century arose from the very effort to improve the human population, through Nazi racial ideology or Stalinist social engineering. While such excesses seem unlikely in a democracy, it remains the case that our own ideas about what might be the best way to improve the human species are limited by our own values, perspectives and horizons.
- *Violations of reproductive freedoms.* We have already noted the crimes of Nazi Germany, the involuntary sterilisation of tens of thousands of Americans and Europeans and the programmes of segregation. But it is worth pointing out that many eugenicists, including Francis Galton and the British Eugenics Society from the early 1930s did not favour coercion.¹⁸ Today, China has a clearly eugenic Maternal and Infant Health Law.¹⁹ But in many other countries reproductive freedom is sufficiently well established that the introduction of programmes for mass sterilisation and other forms of reproductive coercion seems very unlikely.²⁰ It is widely agreed that the elimination of individual choice and the introduction of coercion in reproductive matters are two features of past

¹⁷ Glover, J. (1984). *What Sort of People Should There Be?* Harmondsworth: Penguin.

¹⁸ Paul, D. B. (1998). *Controlling Human Heredity 1865 to the Present*. Amhurst, NY: Humanity Press.

¹⁹ China's Misconceptions of Eugenics [editorial]. (1994). *Nature* **367**,1–2. The law is concerned with negative eugenics, that is, with preventing those with undesirable inherited traits from reproducing.

²⁰ Wertz, D. C. & Fletcher, J. C. Ethical decision making in medical genetics: women as patients and practitioners in eighteen nations. In Ratcliff, K.S. *et al*, editors. (1989). *Healing Technology: Feminist Perspectives*. Ann Arbor: University of Michigan Press. But see also footnote 9 in this chapter.

eugenic practices that make them morally abhorrent. Some have suggested, on libertarian grounds, that voluntarily chosen 'quality control' should be an option.²¹ It should be noted that one does not have to conclude that eugenics free of coercion is morally acceptable. In Chapter 13, we discuss arguments against allowing individuals who would like to make use of techniques of prenatal selection from doing so.

- *Statism.* James Watson, one of the scientists who discovered the structure of DNA, has argued that since state policies were responsible for the eugenic crimes of the past, the role of the state in matters of inheritance should be curtailed. However, as several others have pointed out, the actions of parents, employers and insurers, among many others, can harm those with genetic diseases.²² States can take positive actions to curb such harm. Conversely, states may be involved in funding and organising services for genetic screening and testing as well as the termination of pregnancies with fetuses found to carry genetic diseases.
- *Justice.* 'Eugenics has proved itself historically to have a cruel and always a problematic faith, not least because it has elevated abstractions – the "race", the "population", and more recently, the "gene pool" – above the rights and needs of individuals and their families'.²³ The eugenic movement believed that the human population faced a grave threat of 'degeneration' and that this justified their programmes of segregation and sterilisation. Today, in an attempt to distance current policies from that eugenic past, a line is often drawn between eugenics, as an intervention on behalf of public health and well-being, and clinical genetics as a service for individuals and families. But, this is a line that is very difficult to draw clearly. Behavioural genetics cannot disavow any social purpose, but rather has to ensure that its goals are pursued justly and fairly.

The impact of eugenic thought on research into human behaviour

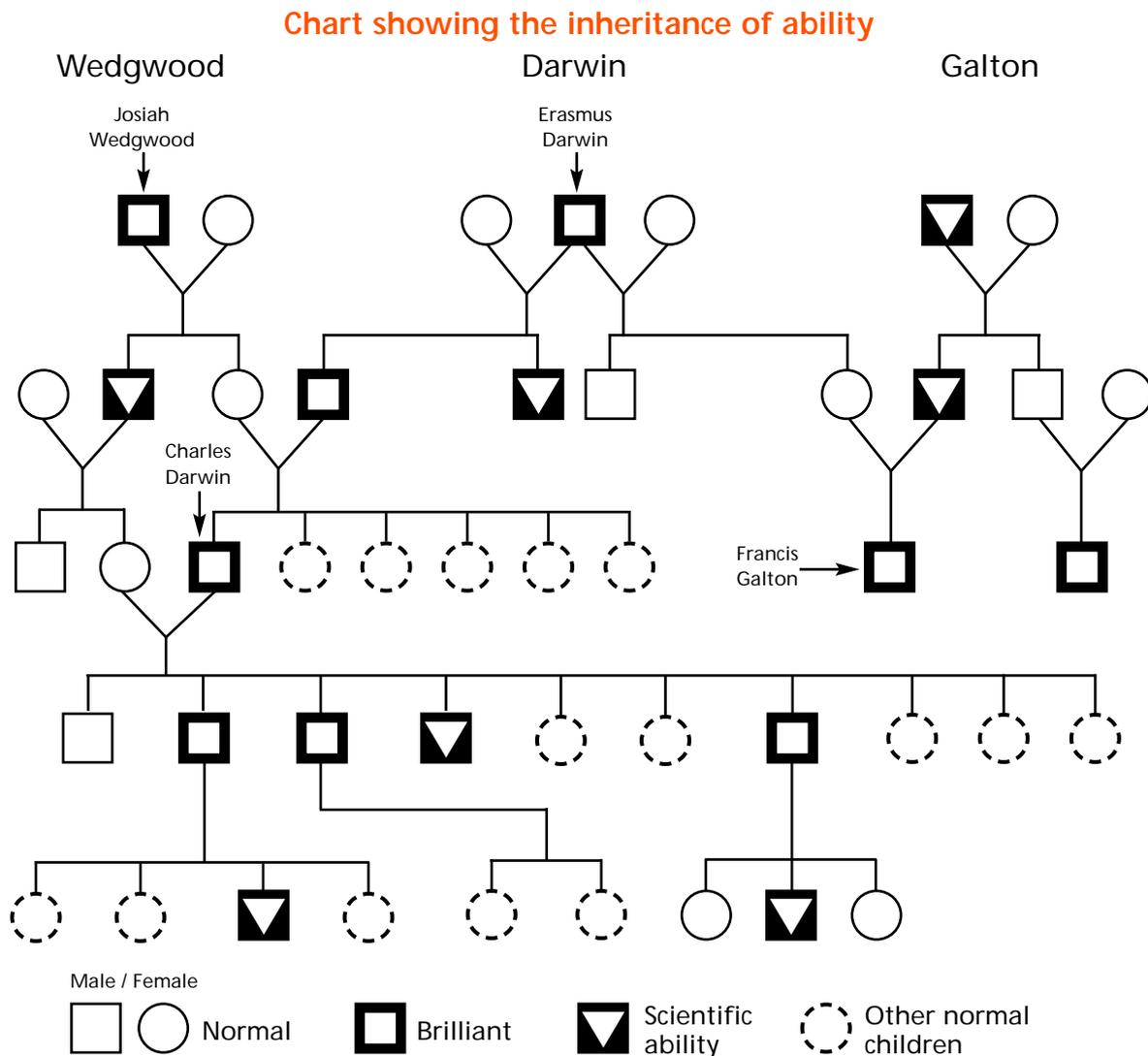
Psychology in the first half of the twentieth century

2.10 It is hardly surprising that eugenic thought profoundly shaped the growth of developmental psychology and what later became known as behavioural genetics. Questions of nature and nurture dominated the developing theories. Pioneers, such as Francis Galton, initially used information about family history and pedigree to argue the hereditarian case for both high and low intellectual abilities (see Figure 2.1). As well as measuring physical characteristics, Galton devised psychological tests which led to the development of IQ tests. He attempted to measure the 'strength' of inheritance by the association of characteristics in parents and children and between other relatives. The pedigree techniques which had proved so successful in the analysis of characteristics associated with single genes (and, indeed, are used to this day for the diagnosis of Mendelian diseases) were found not to be effective for the analysis of traits like intelligence or height, which were increasingly described in quantitative rather than qualitative terms. Each family member in a pedigree can be described as having, or not having, a trait such as blue eyes or a Mendelian condition such as Huntington's disease. In the early work, mental capacities were described in the same way, with individuals classified using terms such as feeble-minded or as having scientific ability (see Figure 2.1). However, in analysing mental capacities, Galton and others moved to the use of quantitative

²¹ For example, Glover, J. (1984). *What Sort of People Should There Be?* Harmondsworth: Penguin.

²² For example, Duster, T. (1990). *Backdoor to Eugenics*. New York: Routledge.

²³ Kevles, D. (1985). *In the Name of Eugenics: Genetics and the Uses of Human Heredity*. Berkeley: University of California Press. pp. 300–1.

Figure 2.1: The first families of eugenics

A pedigree chart showing the inheritance of ability in the Wedgwood, Darwin and Galton families which was originally published by the Eugenics Society in 1909. The names of prominent individuals were added by Resta.*

Francis Galton (1822–1911) was a founder and the first President of the Eugenics Society. On his death Major Leonard Darwin, son of Charles Darwin, became Secretary of the Society and later President. Sir Charles G. Darwin (Charles Darwin's nephew) was a Vice-President and served on the council of the Society with such luminaries as Aubrey Lewis (psychiatrist), Julian Huxley (biologist), John Maynard Keynes (economist), Richard Titmus (sociologist) and D.V. Glass (demographer).

* Resta, R. (1995). Whispered hints. *Amer. J. Med. Genet.* **59**, 131–3. It will not escape the notice of readers that, in line with prejudices of the day, no women are classified as brilliant or as having scientific ability.

measures, like IQ scores, and applied the new statistical approaches. This research led to the development of heritability scores, which are discussed in Chapter 4. Today, IQ is seen as being polygenic (influenced by many genes) in contrast with a disease like Huntington's disease which is associated with the mutation of a single gene. While pedigree methods remain a valuable way to study characteristics associated with a single gene, quantitative methods are needed for polygenic traits such as behavioural characteristics.

- 2.11 Galton's original question about the 'strength' of inheritance is the same as the contemporary common sense understanding of heritability. This is the extent to which inheritance (nature), on the one hand, and environmental (nurture) factors, on the other, contribute to the development of characteristics such as intelligence in an individual. Does an individual owe her high intelligence to what she has inherited from her parents or her upbringing and schooling or a particular mixture of the two? In fact, it turns out to be very difficult to answer scientifically the question posed in these terms. As we shall see in Chapter 4, what research in behavioural genetics can do is to estimate the heritability of a characteristic in a particular group of people, not an individual. This is the proportion of the variation in the characteristic in a particular population, say the variation in IQ scores for a particular group, and it is this group variation which can be apportioned between inherited factors and those in the environment. But, as we shall see later in our discussion, there is a continuing tendency to misunderstand the meaning of estimates of heritability. People often assume that it is the common sense meaning of heritability (or Galton's strength of inheritance). So, if it is stated that the heritability of IQ is 0.50, some people may assume that half their IQ (or that of anyone else in that population) is contributed by their genes and half by their nurture. As will be discussed more fully in Chapter 4, this is incorrect. The scientific meaning of an estimate of heritability of 0.50 is that half the *variation* in IQ scores between people in the group appears to result from genetic variation between them, and half the group variation from differences in their environment and upbringing.
- 2.12 Most of the British scientists involved in the quantitative study of individual and group differences in intellectual abilities in the first half of the century who made lasting contributions to development of the subject, were prominent eugenicists and were centrally concerned with issues of nature and nurture.²⁴ This tradition of research created modern parametric statistics and the scientific study of behavioural genetics.
- 2.13 In the first half of the century there were numerous studies of intellectual abilities often using twin designs and estimates of heritability. These set out to demonstrate that inheritance played a major part in the development of these characteristics. But such work was rather eclipsed in the 1940s and 1950s in the US by the rise of behaviourist psychology. However, the tradition continued in the UK led by psychologists such as Hans Eysenck. The behaviourists compared inputs and outputs, but they had little interest in either the evolutionary or developmental factors that might shape the mind/brain/body.

Psychology from the 1960s onwards

Individual differences

- 2.14 The earlier traditions of 'individual psychology' or behavioural genetics, which were based on techniques of quantitative genetics, were gradually re-established in the United States in the 1960s. Such work received enormous publicity with the publication of Arthur Jensen's

²⁴ For example, Francis Galton, R A Fisher, Karl Pearson and Cyril Burt.

article in the *Harvard Educational Review*, 'How far can we boost IQ and educational achievement?'²⁵ Jensen's own answer to his question was, in brief, 'very little', as he assumed that intellectual abilities were largely determined by genetic endowment. Jensen argued on the basis of estimates of heritability that difference in IQ scores generally found when comparing black and white groups were the result of genetic differences between the groups. He claimed, therefore, that they were unlikely to be able to be changed by environmental manipulations, such as the pre-school Head Start Programmes which at that time were being widely instituted in the US.

- 2.15 Despite the fact that Jensen's conclusions were criticised by many academics (although they did receive support from others such as Hans Eysenck in the UK), they have been very influential. Waters were further muddied because several prominent researchers in behavioural genetics involved in this research both in the US and Britain accepted support from overtly racist organisations. Critics argued that the inferences that Jensen drew from estimates of heritability were invalid and that his arguments involved a notion of genetic determinism that was unsupported by evidence. Recently, broadly similar arguments to Jensen's, which reach generally similar conclusions related to socioeconomic differences in the USA, have been put forward in *The Bell Curve*.²⁶ These, too, received wide international publicity and much criticism, but also support, from some social scientists, psychologists and geneticists.²⁷
- 2.16 There continues to be a popular but mistaken belief that the level of heritability equates with the ease or difficulty of changing or altering a particular characteristic, or its immutability. However, researchers in behavioural genetics and psychologists would now agree that the ways in which different factors interrelate in the development of a characteristic are not related to its immutability. Environmental interventions, be they social, dietary, physiological or otherwise, can change the course of genetic diseases or, indeed, behavioural characteristics that are highly heritable. Conversely, there are numerous examples of social and cultural practices and behaviour that are very resistant to change.

Evolutionary psychology

- 2.17 In part as a reaction against the behaviourism of the 1950s and 1960s (paragraph 2.12), other approaches were developed that drew to a greater extent on biology. One example of this trend is evolutionary psychology. Evolutionary psychology takes its inspiration from the Darwinian theory of natural selection. A general aim is to see how current patterns of behaviour can be understood in terms of our evolutionary history. Where a particular pattern of behaviour is widespread and is seen across different cultures, it is often assumed that there will have been strong selection pressures favouring the development of that behaviour and so the selection of the particular genetic variants ('genes') responsible for its development. There is therefore a general inference about processes of development in the individual (ontogeny) from the presumed evolutionary process (phylogeny) that has led to the widespread occurrence of the behaviour pattern. Over the past two decades the principles of evolutionary psychology have been widely applied to the study of human behaviour. But evolutionary biology has always had its critics,

²⁵ Jensen, A. R. (1969). How much can we boost IQ and scholastic achievement? *Harvard Educ. Rev.* **39**, 1–123.

²⁶ Herrnstein, R. & Murray, L. (1994). *The Bell Curve: Intelligence and Class Structure in American Life*. New York: The Free Press.

²⁷ Devlin, B., Fienberg, S. E., Resnick, D. P. & Roeder, K., editors. (1997). *Intelligence, Genes and Success*. New York: Copernicus.

²⁸ Rose, H. & Rose, S. (2000). *Alas Poor Darwin: Arguments Against Evolutionary Psychology*. London: Cape.

particularly from the field of developmental biology.²⁸ One criticism they make is that there is no necessary connection between a possible evolutionary explanation that suggests that selection pressures may have influenced a pattern of behaviour in the past, and the processes of development that lead an individual to behave in a particular way in a particular situation.

Processes of development

2.18 There are of course many other approaches within developmental psychology which attempt, in various ways, to understand the processes of development of behaviour in individuals and to isolate factors which have significant effects. Given the complexity of the processes involved, it is perhaps not surprising that no theory of development is generally accepted. While most developmental psychologists believe that nature and nurture are both involved in the development of behavioural characteristics, there is an increasing move towards a variety of theoretical positions that do not use this conceptual dichotomy.

Conclusion

2.19 Behavioural genetics was established in the era of eugenic policies and practices; indeed, it formed a major part of the scientific foundations on which these policies were claimed to be based and the development of behavioural genetics was itself shaped by eugenic concerns. However, this does not necessarily imply that contemporary research on the genetics of behaviour is in any sense eugenic or is driven by considerations that could be considered eugenic. In fact, as we have pointed out, part of the reason for the decline in the support of eugenic policies in many countries from the 1930s onwards was scientific research which demonstrated that the policies of segregation and sterilisation of those deemed to be unfit would not achieve their stated goals. However, as a number of respondents to our consultation have suggested, there remains a view that research on the genetics of human behaviour, particularly in the area of intelligence, is necessarily eugenic or will lead to the re-establishment of eugenic policies. It is possible that contemporary understanding of the heritability of IQ and other behavioural characteristics, and increasing knowledge of the processes of inheritance of other traits, could provide a scientific foundation for a programme of positive or negative eugenics, were there to be the political will or power to construct and implement such a policy.

2.20 We conclude that historical and philosophical studies of eugenic practices and policies should be encouraged so that it may be clearly understood what was, and was not, unacceptable about the past and the ways in which this may, or may not, be distinguished from contemporary genetic policies and practices.