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Introduction

In his now classic work, *Mental and Scholastic Tests*, first published in 1921, Cyril Burt tells his readers a parable:

> In the history of Rasselas, Prince of Abyssinia, it is related how a foolish barbarian once attempted to fly. He ascended an eminence, flourished his wings, sprang from the edge, and at once dropped headlong into a lake. But his pinions, it is added, which failed to sustain him through the air, sufficed to bear him up when he reached the surface of the lake. The episode was written as an allegory; and may not inaptly typify the fate of the defective at large. In a thin and treacherous atmosphere, at the difficult and dizzy altitude where highly civilized men, assisted by the newest machinery of a highly civilized community, alone can securely travel, and alone should venture to soar, there the simpleton, less fortunately equipped and oblivious to his ill-fortune, must crash instantly to ruin. But if he lights upon a humbler medium, dense enough and yet elastic enough, more buoyant and yet less variable, he may contrive, though quite mechanically, to support himself unaided. In one *milieu* he falls, in the other he may float. He is there, as we say, in his element.
>
> (Burt, 1921, p.172)

Each to his element: Burt's is indeed a noble scheme, perhaps even recalling another – from each according to his ability, to each according to his needs. And if the techniques of assessment which Burt presents to us in his text are to facilitate this philanthropic distribution of individuals, should we not admire them? Yet before we leap to such admiration for this proposal for the use of psychological science in the service of man, we will find it instructive to look a little more closely at Burt's schema, at the desire which motivates it, the analysis which underpins it, the object which it constructs for itself. And I think that such an examination will cast some light upon the very conditions of possibility for, and consequences of, the formation of a discipline of

psychology in England. It is these questions which the present paper addresses, through a consideration of the emergence of a particular problem of mental deficiency and a particular conception of mental measurement in England in the closing decades of the last century and the early years of our own (1).

It is commonly accepted that psychology emerged as a coherent and individuated theoretical field, in Britain as well as in Europe and the United States, during a period which stretched from about 1875 to about 1925. Now there is nothing definite about these boundaries, they can obviously be drawn differently according to the criteria which one brings to bear upon the body of texts and documents which we have available to us. Nevertheless, both from the statements of the contemporary participants, and from the standpoint of today, one can certainly distinguish something happening over this fifty year period which has the character of an 'event', an event which seems to consist of the translation or extension of certain recurrent questions concerning the nature and attributes of man from the closed space of philosophy to a domain of positive knowledge.

One can trace, over this period, the progressive institutional delineation of Psychology from Philosophy and Logic within the universities; one can see the development of institutions and departments specific to psychology – psychological laboratories for instance; one can observe the establishment of a whole technical apparatus – professional associations to form a specifically psychological community with its own rules and traditions for designating who is competent to speak, what objects can be spoken of, and in what way, also a network of professional journals to disseminate the results of psychological research – and so forth. And one can also begin to see the beginnings of an involvement of theories elaborated within this field, and of professional psychologists recognised in it, in a whole series of other areas – the practices of social administration and of social work, of the schools and the clinics, of the army and, somewhat later, the prisons. In other words one sees, at this time, not simply the establishment of a *discipline* of psychology but also of what we might term a psychological *complex* – a heterogeneous but regulated domain of agents, of practices, of discourses and apparatuses which has definite conditions of existence and specifiable effects.

Now, confronted with an 'event' of this type, one is always tempted to ask oneself the question 'why?' – why psychology, why precisely at this time, why exactly in these places, why in these particular forms – that is to search for origins and to seek to uncover causes. The account which follows, however, is of a different type. Rather than seeking for some general principle which has produced this formation of psychology, some cause which would thus ideally enable us to construct a global history of psychology as a unified field of effects, I will attempt to delineate the singularity and specificity of the different discourses and practices involved here, the play of their relationships

and dependencies, the possibilities opened up by their correlations and consequences. And rather than attempting some overarching project of synthesis, I will attempt to trace a path through this 'event' by examining some specific questions concerning the relationship between a certain question of the mentally defective, a certain conception of mental measurement and a certain practice of social administration.

Despite the limited aspirations of this analysis, however, there are some hints that the questions which it raises might lead to the heart of modern psychology itself, or at least that part of it which dreams of the possibility of a science of the human individual. It is on this possibility that Cyril Burt elaborates when speaking in Edinburgh in 1927 on the question of mental measurement. He begins by considering the conditions of emergence of a scientific psychology from its philosophical forbears, and identifies, in this emergence, two major transformations – that in the late nineteenth century whereby psychology changed its *method* to that of systematic observation and research, and that in the twentieth century whereby psychology changed its *subject* from man-in-general to a concern with *individual differences.* For Burt, who is of course by no means neutral in this regard, the scientific psychology of the twentieth century constituted itself precisely around the *question of the individual and its differentiation,* a question whose emergence is related to some definite practical demands:

> Like so many advances in theoretical science, the annexation of this new field [of individual psychology] may be traced to the pressure of practical needs. The psychology of education, of industry, and of war, the study of the criminal, the defective and the insane, all depend for their development upon a sound analysis of individual differences; and the investigation of the more practical problems has already begun to pay back its debt, by furnishing fresh data of the utmost value to the mother science. And so at least we have seen the birth of the youngest member in the list of sciences – the psychology of the individual . . .
>
> It aims at almost mathematical precision, and proposes nothing less than the measurement of mental powers.
>
> (Burt, 1927, p.5)

It is upon a similar note that Alfred Binet and his pupil Victor Henri began their programmatic paper of 1895, 'La Psychologie individuelle'. "The aim of individual psychology," they write, "is to study different psychic processes in man and, in studying them, to pay attention to the individual differences in them . . . Individual psychology . . . studies the properties of psychic processes that vary from individual to individual – it has to determine the various properties and then study how much and in what respect they vary with the individual." (Binet and Henri, 1895, translation quoted from Herrnstein and Boring, 1965, p.428). The psychology of the individual, for Binet, thus forms itself immediately around the twin operations of *measurement* and *differentiation* – its object is specific only to the extent that it is

constituted as both measurable and differentiable – the object that is constituted for and through this psychology, as both its object and its target, is the human individual itself:

> We must search with the present knowledge and methods at hand for a series of tests to apply to an individual in order to distinguish him from others and to enable us to deduce general conclusions relative to certain of his habits and faculties . . .
>
> The studies of individual psychology are one of psychology's most important practical applications since their aim is knowledge of the individual, and they must be examined and directed toward the goal we would affirm. There are, it seems, four principal routes to be pursued: the study of races, the study of children, the study of patients and the study of criminals.
>
> (ibid., p.431)

Perhaps it is because the mental defective is such an apt combination of all four routes in one that he will prove, for Binet also, the royal road to psychology's knowledge of the individual.

The analytics of psychology – history/ideology

Most texts on the history of psychology accord no central place to the emergence of mental measurement, relegating it largely to the level of technical innovation and hence both secondary and derivative. To the extent that such histories do touch upon the questions which concern us here, their accounts centre around the concept of 'intelligence'. In such accounts the emergence of a scientific conception of intelligence at the end of the nineteenth century and the beginning of the twentieth is seen as the culmination of centuries of more or less philosophical speculation concerning the nature of the abilities of man. During the period of formation of our contemporary conceptions, such histories trace a progressive development and refinement at both the conceptual and theoretical level – in our concepts of intelligence and our definitions of what it consists in – and at the practico-technical level – in our research methods, our facilities for gathering data through investigation and assessment, our procedures for statistical analysis and interpretation of results. This work of development and refinement is attributed to the labour of a number of innovators and pioneers, men of sufficient calibre to develop, extend, and in some cases break with existing conceptions of the nature of man's abilities, and thus to place future debates over the characteristics of human cognition upon a scientific terrain. This procession of founding fathers is familiar to anyone who has taken an elementary course in psychology – Francis Galton, Charles Spearman, Alfred Binet, Karl Pearson, Cyril Burt, Godfrey Thompson – each making his contribution to an adequate understanding of the nature of intelligence and a means of measuring it. Of course it is true that, in compiling such a chronology, the standard texts on the history of psychology recognise that this path towards scientificity has not been entirely smooth – they document the heated debate between Spearman, on the one hand, and Binet or Thompson, on the other, concerning the validity of the conception of 'g' or general

intelligence, and the controversies over the relative contributions of heredity and environment to intelligence. For, as these accounts assure us, such controversy is the very stuff of scientific progress, generating further research, the carrying out of crucial experiments, the refining of concepts and so forth. And it is equally true that such standard histories are apt to mention, as an afterthought, the practical applications of the test of intelligence – Binet's work on the selection of children unable to benefit from normal school education and therefore in need of special educational help, Burt's pioneering work in the field of educational psychology, the impetus of the problem of examining American draftees for the First World War on the development of group tests – for it is indeed the happy status of psychology that its work is always enlivened by and relevant to questions of everyday life (2).

In such histories, then, the characteristics of the 'event' in which psychology constituted itself as a science and, simultaneously as a science of the individual, consisted in the freeing of the theory of man from the distorting glasses of religion, metaphysics and speculation, a freeing which exposes the human individual for its theoretical elaboration within a veridical scientific discourse. And if such a freeing is stimulated, quickened, even induced by certain practical problems, it is nonetheless an occurrence in a pure theoretical space in which a union is achieved at last between a discourse motivated only by a desire to know and its object, the human individual, which pre-existed and awaited it.

Now of course not everyone has been willing to accept such a view of the conditions of development of a psychology of the individual and of the techniques of mental measurement. And a series of attacks and denunciations have been launched upon the theory and practice of mental measurement in general, and the notions of intelligence and the intelligence quotient in particular, by socialists and marxists. A number of different strategies of criticism may be identified, often interwoven in any particular contribution, which nonetheless all operate upon the familiar terrain of theories of ideology. That is to say, the characteristics of the discourses and practices of mental measurement are conceived of as a unified domain of effects, expressions or representations of a single cause, situated at a deeper and more fundamental level, and these discourses and practices are regarded as having developed at a specific time, and as persisting today, as a result of the determinations which are exercised upon social phenomena by such a cause. Upon this terrain, competing explanations are advanced: mental measurement is an expression of the class interests of the agents who expound or practice it, or their paymasters, is a pseudo-science which sustains capitalism at a time of economic crisis, is an instance of a general reification of human creativity under capitalism, is a representation of the nature of capitalist societies to turn social relations into things, is an expression of the ubiquity of the logic of the development of capital (3). Yet all these forms of argument share a double

function: they serve both as explanations (mental measurement is explained as the effect of a cause) and as critique (as the effect of this cause mental measurement is falsity). Critique, then, is the confrontation of the falsities of ideology with their reason and their truth. Yet as a strategy of intervention, critique is irredeemably incoherent. For either, as effect of a cause, ideology must persist until the cause itself is transformed, in which case denunciation is merely a useless expenditure of breath, good for the soul but irrelevant to history, or as domain of falsity, it must be conceived as sufficient to speak reason and expose lies for ideology to loose its hold: a rationalist doctrine which fails to recognise that if ideologies have effects this is only because it is in and through them that the effect of truth is constituted, by means of operations which are not dependent upon rational or causal principles for their actions.

And again, without rehearsing the various theoretical and epistemological objections which may be made to such concepts of critique, I should point out that the opposition between these analyses and those of the histories which they criticise disguises a deeper homology. In the category of history in the bourgeois texts the discourse of psychology is read in terms of a single movement in which knowledge strives, through the agency of the subjects which are its origin, towards an object which pre-exists it and provides the form and measure of its truth. In this category of ideology of the marxist critiques the discourse of psychology is read in terms of the language of effects and of functions, and is reduced in its turn to the place which is marked out for it in advance by a movement which operates at a deeper level of reality which is its origin, prescribes its character and is the measure of its falsity. But whilst both history and ideology examine discourse only to find in it the sign of something else — the movement of knowledge towards its object, the hidden hand of capital — in this paper I wish to adopt a different point of view. The metaphor of vision used here is not intended to counterpose opacity to a promise of transparency, on the contrary it is to stress that in this vision, as ever, the means are determinant. For the point of view which I want to adopt with regard to the question of mental measurement will, I hope, open up certain new relationships for inspection which, from the perspective of either the history of thought or the ideology of capital, are rendered virtually invisible. And I will view the field of psychological discourse here as a functioning domain in which power may be regarded as immanent both negatively — in the operation of exclusions and prohibitions — and positively — in the production of objects, of strategies, of a whole range of effects which are neither reflections nor representations of something else. A domain, moreover, which is constituted with describable conditions and dependencies in other discourses, practices and strategies, but whose relations with them are governed by no single principle and unified by no global cause.

Very well. It is in the light of these comments that I want rapidly to turn to the proper object of this paper. But first I think it is necessary

for me to deal very briefly with two sorts of objections. First, in wishing to examine the conditions for the emergence of the psychology of the individual, the strategies in which it has been implicated, the objects it has constituted, the targets it has directed itself towards, am I not forgetting one crucial question to address to psychology: that of its cognitive validity, its truth. So what if a given discourse emerged in certain conditions, what should concern us perhaps is whether or not its statements are correct, for do not all theories have historical conditions of formation, even true ones? No doubt this objection points to the site of a real problem. However it is also necessary to recognise that a discourse consists not merely of the sum, or a proportion of the sum, of the truths which may be stated about a given object. For not only does every discourse contain a certain number of statements which are 'errors', are incoherent or internally contradictory, but these 'errors' are not merely marginal, can not merely be partialled out in an attempt to isolate the gold from the dross, but they *function,* they play a certain role within a discursive field, they have their own history and their own significant consequences. To evaluate a discourse according to some criterion of correctness, even if one was possible, does not enable one to say very much about the positive function of 'error' within a discourse, and the productive function of incoherence. Secondly, a discourse cannot consist only of a proportion of the possible propositions concerning a given object, which may then be evaluated according to a criterion of truth, but also of certain rules for what may count as a valid proposition within the discourse, rules which thus at the same time constitute the object of which they speak. One cannot say very much about this positive and regulated relation between propositions and objects if one forgets that the objects of a discourse simply do not exist in an independent form from the statements which describe them such that an object may be used to evaluate the truth of a statement which purports to speak of it.

So rather than concern ourselves with truth in an epistemological sense, what we will be examining here is the constitution of a 'regime of truth' (Foucault) which will establish, in any given discourse, the conditions which statements will have to fulfill if they are to count as truths, and the means and consequences of the production in discourse of the effect of truth. If we examine discourses in this way we will, I think, find that despite their *inconsistencies* – their ambiguities, contradictions, and productive use of metaphors and conflations – they are nonetheless not *undetermined.* Far from being a free play of speech, motivated by the desires of a speaking subject or subject to the negotiations of some speech community, the operations of discourses are regulated and may be described and their conditions of possibility may be investigated. And through such an investigation, perhaps, discourses may be opened up for interventions which no longer are condemned to endlessly repeat the denunciations of error, the circular attempts to dispel falsity by speaking truth, but which may give rise to an effective strategy of transformation.

And the second objection concerns precisely the status of the historical analysis which I am trying to carry out. Am I here engaged upon a search for some 'real history' of psychology with which to confront the counterfeits proposed by bourgeois or marxist analysis? This is definitively not the function of the analysis which follows. Rather it is in the spirit of what, in the human sciences, Foucault has termed 'genealogy' or history of the present, perhaps also related to what George Canguilhem, drawing on the work of Gaston Bachelard, has discussed in terms of 'recurrence' and 'reactivation' (4). That is to say my return to these documentary traces of psychology's past is in order to cast some light on certain questions of the form and functioning of psychological discourse in the present and possibly to enable us to think of our relationship to it and its objects in a new light, to pose to it certain new problems. Or at least to make a start in this direction.

Leon Kamin and the politics of intelligence in the U.S.A.

My immediate starting point for this investigation was reading the remarkable first two chapters of Leon Kamin's book *The Science and Politics of I.Q.* Kamin, in tracing in these chapters something of the early history of the mental testing movement in America, reveals what one might at first regard as the disreputable marginalia of the beginnings of a scientific conception of intelligence – that is to say the complicity, during the first two decades of this century, between a certain discourse on intelligence and a certain political project. But then one wonders, can the texts which Kamin cites be so easily dismissed as marginal, as the dross inevitably thrown up in the beginnings of any science? And one wonders if perhaps the relations which Kamin describes have more to tell us about the formation of the psychology of the individual than he himself suspects.

Kamin documents the complicity between the efforts of American psychologists to develop and promulgate the practice of mental testing and their involvement in various societies and organisations in America dedicated to a political strategy of eugenics. Now the term eugenics was introduced in 1883 by Francis Galton to refer to what he had previously termed stirpiculture. In his *Inquiries into Human Faculty and its Development,* Galton designates by eugenics the science of improving stock, not only by judicious mating, but which:

> . . . especially in the case of man, takes cognisance of all influences that tend in however remote a degree to give the more suitable races or strains of blood a better chance of prevailing speedily over the less suitable than they otherwise would have had.
>
> (Galton, 1883, p.25n)

Eugenics and intelligence were linked in the American writings in a strategy which concerned two questions: that of mental deficiency and that of race. First, on the question of mental deficiency, this is Terman writing in the opening chapter of his famous book of 1916, *The Measurement of Intelligence,* in which the Stanford-Binet scales

were first published:

> . . . in the near future intelligence tests will bring tens of thousands of these high-grade defectives under the surveillance and protection of society. This will ultimately result in curtailing the reproduction of feeble mindedness and the elimination of an enormous amount of crime, pauperism, and industrial inefficiency. It is hardly necessary to emphasise that the high-grade cases, of the type now so frequently overlooked, are precisely the ones whose guardianship it is most important for the State to assume.
>
> (quoted in Kamin, 1977, p.20)

Characteristic in the discourse which Terman represents is the simultaneous constitution of a problem, of its explanation, of its solution, and of the means by which this solution is to be effected. The problem is criminality, is pauperism, is indigence, is inefficiency, is all that which appears to threaten the well-being of an ordered and regulated social body. The explanation is made possible through a double movement which consists in both a *moralisation* and a *medicalisation.* For if this explanation retains the traditional links between these dangers and threats and the character of those subjects who willfully continue to stand outside the social order, it nonetheless transfers the conception of character which is implicated from an ethical to a scientific domain; feeble mindedness as a category of science, of psychology, becomes inextricably linked to a threat to civilised existence. And this explanation is doubled through its linkage with heredity which provides simultaneously the elements of a solution – and this is precisely the eugenic move. For if feeble-mindedness is accorded this matrix role in social danger and is transmitted principally through the faculty of reproduction, then, ipso facto, the curtailment of feeble-minded reproduction is equivalent to the elimination of this enormous amount of social danger. But if such a solution is obvious, the means to effect it are clearly crucial, for the threat declares itself only in the most extreme cases. Above and beyond these extremes, high-grade defectives walk the streets undetected, indistinguishable from the norm to the untrained eye, and yet harbouring within them the seeds of innumerable social ills. What is necessary, then, is a means whereby these hidden secrets may be illuminated, exposed to the gaze of the State, so that those who are in the social but not of it, who might otherwise have spread their anti-social diseases undetected, may be brought within the regulated apparatus of social administration, delivered into the guardianship and protection of the State. Note here the ambiguity of the terms guardianship and protection, for the systematic reversibility of subject and object which they allow plays a very productive role in this discourse. And note too their linkage with the third term which is for our investigation the crucial point – for it is precisely here that Terman will wish to insert the test of intelligence which he has developed from Binet.

Kamin's account is instructive in another respect, for it demonstrates that the work of Terman, and of the other pioneers in the field of

mental measurement in the United States, located itself in a space already marked out, in a discourse on the social which centred around the question of *degeneracy*. Thus the Attorney General of California states six years prior to the publication of Terman's book, in 1910.

> Degeneracy is a term applied when the nervous or mental construction of the individual is in a state of unstable equilibrium. Degeneracy means that certain areas of brain cells or nerve centres of the individual are more highly or imperfectly developed than other brain cells, and this causes an unstable state of the nerve system, which may manifest itself in insanity, criminality, idiocy, sexual perversion or inebriety. Most of the insane, epileptic, imbecile, idiotic, sexual perverts, many of the confirmed inebriates, prostitutes, tramps and criminals, as well as the habitual paupers, found in our county poor asylums, also many of the children in our orphan homes, belong to the class known as degenerates . . .
>
> (quoted in ibid., p.27)

Degeneracy, then, unifies in a common term a field of social problems which appear to merely be different expressions of a single essential principle. And this principle, localised within the psyche of the degenerate, is itself already medicalised. Not only this, but a further question which will provide one of the central thematics of psychological discourse on intelligence is already established – that of heredity – for the Attorney General is making the above analysis in the course of upholding the California laws allowing for the compulsory sterilisation of degenerates. Now such a reference to compulsory sterilisation may come as a surprise to those who were under the impression that such laws and practices were the invention of one aberrant and inhuman regime. However, as Kamin shows, the rise of the mental testing movement in America, with the linkage which it proposed between intelligence, heredity and social danger, post-dates the passage of sterilisation laws in a number of American states, the first fully enacted law being that of Indiana in 1907. Such sterilisation laws were, it is true, seldom enforced; however if we can regard the question of feeble-mindedness as concerning, in this American example, the *internal* regulation of the social body, this project was twinned with a question in which mental measurement was to play a decisive role, the question of the *external* regulation of the population – control of immigration. For the national origin quotas, which became a permanent aspect of American immigration law after the passage of the Johnson-Lodge Immigration Act of 1924, are argued by Kamin to have been the successful realisation of a eugenicist strategy designed to exclude most immigrants from the south-eastern European countries, a strategy in which the evidence deployed within the writings of the American pioneers of intelligence testing was of crucial importance, with the linkage which it claimed to establish between intelligence, heredity and race.

But so what, one might well ask? Kamin's demonstration of the

complicity between a certain interest in the techniques of assessing intelligence and a certain social and political application of such techniques can tell us nothing of importance concerning the status of the concept of intelligence in psychological discourse and even less about the general field and functioning of a psychology of the individual. For we can neither subscribe to a view which reduces the theoretical events involved in the foundation of a discipline to the personal views of a few men, nor one which would attempt to read off the character of such a discipline from an investigation of its origin. All we have seen here, in the American experience, is the work of a few cranks, eccentrics, eugenicist extremists, who for a brief period managed to capture the ears of politicians and who misused the intrinsically neutral young science of the individual to further their own reactionary ends.

If the matter were to rest with Kamin's account there would, no doubt, be some grounds for such an objection. Kamin does indeed carry his historical analysis no further than anecdote, and in the remainder of his text takes his stand, deliberately, on the question of evidence. For his own purposes nothing more is required, but what if we were to take up the challenge which he leaves us, to prolong his critique to the very heart of individual psychology itself? For in the examination that follows I hope to suggest that what we are concerned with here is no momentary aberration, no simple intrusion of the personal views of certain individuals, no simple infection from outside coming to pollute an otherwise pure body of psychological discourse, no accident of the origin whose interest is merely historical. On the contrary, I want to explore what might be gained by considering whether the very object and domain of the psychology of individual differences has been formed through the action of a number of discursive operations which these 'cranks' who were its founding fathers had the naivity, or the certainty of purpose, to formulate in their nakedness. Perhaps it is only a certain clarity that distinguishes these patrons from the latter-day saints of the psychological church of the individual. For we will find in Britain too that the formation of the field and function of psychological assessment of the individual is structured by the concepts of race, population, norm, degeneracy, surveillance and segregation that Kamin finds in his American texts. And we will also find that this psychological discourse does not occupy a realm external to a politics of social administration, whether it be conceived as truly independent or related through some mechanism of expression, representation or causation, for the field of the psychology of the individual is an integral part of the formation and operation of a particular strategy concerning the social body. In this strategy, the individual of psychology can be seen as both object, target and instrument in a complex but describable relation of knowledge and power. One will find here a discourse and a strategy operating in two registers, whose frequent contradiction is not a problem, but on the contrary a functioning necessity – one of which concerns a certain question of social economy, a macropolitics of the regulation and administration of the population; the other of which operates at the level of a micro-technics of the individual, at the

level of their production and socialisation.

What would then be raised is the possibility of viewing the discipline of the psychology of the individual not as a 'science' – an autonomous field of research and investigation producing a discourse free from the effects of power – but as a *savoir* – a discourse acting the part of matrix for a productive dialectics of knowledge and technique, a discourse where the question of social power and its organisation is directly at stake. This should not be confused with a view which wishes to see in psychology a form of control whose covert object is the preservation of a certain system of production or social division of labour, though questions of fitness to work and differential forms of employment certainly enter into it. On the contrary the strategy which makes possible a psychology of the individual is one formed through "a systematic grafting of morality onto economics" (Donzelot), and a systematic medicalisation of the ethical field.

Population and norm

If Francis Galton was hardly modest concerning the implications of his study of the family trees of four hundred eminent men when his *Hereditary Genius* was first published in 1869, by the time of its second edition the programmatic aspirations of the text were absolutely explicit:

> . . . the improvement of the natural gifts of future generations of the human race is largely, though indirectly, under our control. We may not be able to originate, but we can guide. The processes of evolution are in constant and spontaneous activity, some pushing towards the bad, some towards the good. Our part is to watch for opportunities to intervene by checking the former and giving free play to the latter . . . It is earnestly to be hoped that inquiries will be increasingly directed into historical facts, with a view of estimating the possible effects of reasonable political action in the future, in gradually raising the present miserably low standard of the human race to one in which the Utopias in the dreamland of philanthropists may become practical possibilities.
>
> ([1892] 1962, p.41)

What Darwin revealed of the blind forces that guided the evolution of man from the ape need not be a sign of despair, or resignation in the face of the inexorable laws of nature – on the contrary in recognising these laws we become their masters. The possibility of controlling evolution by means of science inheres in the relationship between the hereditary transmission of variable characteristics, the laws of variation within a population, and the effects of selective reproductive advantages. It is this combination which gives a political pertinence to the question of individual differences, and which allows Galton to reformulate the traditional theme of ancestry, with its relationship between inheritance and nobility, in a new way which will inform the eugenic strategy towards 'the social question', the alliance between heredity and degeneracy.

The principal terms which structure Galtonian discourse are those of population and norm. *Population* is a bounded space within which a multiplicity of individual elements are regulated according to a law that owes its generality neither to biology nor to culture but to mathematics ("The science of heredity is concerned with Fraternities and large Populations rather than with individuals, and must treat them as units", Galton, 1889, p.35). *Norm* is that central point which, in virtue of the probability of deviations from it and their magnitude, allows the statistical conceptualisation of the space of population in terms of the regular distribution of variations – norm is that which makes possible the law of frequency of error ("I know of scarcely anything so apt to impress the imagination as the wonderful form of cosmic order expressed by the 'Law of Frequency of Error' . . . The huger the mob and the greater the apparent anarchy, the more perfect its sway", Galton, 1889, p.60). Let me investigate each of the terms in a little more detail.

Population

Three points concerning the concept of population are relevant for our analysis(5):

> . . . I look at the term species, as one arbitrarily given for the sake of convenience to a set of individuals closely resembling each other . . .
>
> (Darwin, [1859] 1968, p.108)

In the classical morphology of Cuvier, species were a fixed type, defined according to a given and invariable set of characters. Within such a fixed classification, in which both the nature of, and the relations between species were established once for all, variations between individuals of the same species had no pertinence, and were either 'nothing' or were accorded only the status of defects. After Darwin, species were constituted not by resemblances to type, but by the relations between individuals within a population – a species was a differentiated unity of interbreeding individuals. This differentiated unity was not fixed *a priori* but was an historical and geographical phenomenon – it was established in time and in space. Thus Darwin opened for investigation a field of systematic relations between population, variation and individuation, in which the very nature and constitution of a species itself could, in certain circumstances, be directly at stake:

> . . . as more individuals are produced than can possibly survive, there must in every case be a struggle for existence, either one individual with another of the same species, or with the individuals of a distinct species, or with the physical conditions of life.
>
> (ibid., p.117)

In Darwin's definition of species, a conception of population is developed as an internally differentiated space with functionally established boundaries. Two important sorts of question become opened up for analysis, whose action is simultaneous and comple-

mentary: the differential effects of variation *internal* to a given population, and the differential *external* effects of variation between populations which come into competition. Population thus becomes an organic unity of its constitutive individuals – not merely the sum of its parts but the effect of their differential nature and relations. Not a type and its realisations but a unity of differentiated individuals.

> . . . individual differences are highly important to us, as they afford materials for natural selection to accumulate . . .
>
> (ibid., p.102)

Darwin's conception of population, far from eliminating the question of the individual from the domain of evolutionary theory, precisely creates the individual in its variability as a pertinent object for such a theory. The relationship between population and individual is an internal one – variation only happens in individuals, it has evolutionary effects only through populations: individual variation thus achieves its pertinence *from the point of view of the population.* Darwin's conception of normal and inevitable small variations between individuals entails a notion of the grouping of such variations around a population average – it is the location of this average which variation may produce. The relation between individual variation and population averages produces the possibility of an evolutionary schema being constructed in terms of a population statistics – and it is precisely within this possibility that Galton's eugenics will operate.

Norm

It is in his *Inquiries into Human Faculty* that Galton begins to construct the alliance between individual variation and population characteristics that will provide the possibility for a rigorous systematisation of human abilities. "The object of statistical science", he writes, "is to discover methods of condensing information concerning large groups of allied facts into brief and compendious expressions suitable for discussion. The possibility of doing this is based on the constancy and continuity with which objects of the same species vary" (1883, p.49). If we are to be able to take control of the apparently random, yet evolutionarily crucial, processes of individual variation within a species, we must firt be able to grasp them, to conceptualise them in order to be able to operate upon them. For Galton, the species of Darwin shares the same properties as other species: "A species may be defined as a group of objects whose individual differences are wholly due to different combinations of the same set of minute causes, no one of which is so powerful to be able by itself to make any sensible difference in the result" (1883, p.50). Within such a species, whilst variations within any individual may be random, the incidence of variations in a population is systematic, forming a smooth curve – the ogive. Thus chance becomes adequate to knowledge, amenable to the formulation of a scientific law:

> We can lay down the ogive of any quality, physical or mental, whenever we are capable of judging which of any two numbers of

> the group we are engaged upon has the larger amount of that quality . . . There is no bodily or mental attribute of any race of individuals that cannot be so dealt with, whether our judgment in comparing them be guided by common-sense observation or by actual measurement, which cannot be gripped and consolidated into an ogive with a smooth outline, and thence forward be treated in discussion as a single object.
>
> (1883, p.52)

If this thesis of continuity and regularity delivers population up to knowledge, it is the norm which allows the formulation of the law of this variation, and hence the organisation of all the features of human ability within a single conceptual space. For the relationship between average and deviation is the foundation of the theory of normal distribution, and the basis of the power of the normal curve:

> An average is but a solitary fact, whereas if a single other fact be added to it, an entire Normal Scheme, which nearly corresponds to the observed one, starts potentially into existence.
>
> (1889, p.62)

And it is the normal curve which will provide eugenic discourse with one of the crucial theoretical conditions of possibility for the strategy which it will constitute, and also provide a vital condition for the emergence of a science of mental measurement. It is the norm which will allow that 'gripping' of the population in thought which Galton desires, and hence the formulation of a systematic relation between four terms – population, norm, individual and deviation – which will come to regulate the Galtonian theoretical field.

Genealogy

If Galton can regard his statistical discoveries as having programmatic consequences, this is because they are immediately deployed within a field of social analysis whose organisation pre-dates them, that of ability and nobility, ancestry and lineage, stock and constitution. In the third chapter of *Hereditary Genius* Galton is perfectly clear concerning his objective: he is considering the question of the theoretical means whereby men may be classified in order to be able to produce a classification of individuals in terms of their differential possession of intellectual capacity. Having considered briefly such varied evidence as the attaining of mathematical honours at Cambridge, the memory of Lord Macauley and Seguin's experience with idiots, he concludes:

> . . . the range of powers between – I will not say the highest Caucasian and the lowest savage – but between the greatest and least of English intellects, is enormous. There is a continuity or natural ability reaching from one knows not what height and descending to one can hardly say what depth. I propose in this chapter to range men according to their natural abilities, putting them into classes separated by equal degrees of merit, and to show the relative number of individuals included in the several classes. Perhaps

> some person may be inclined to make an offhand guess that the number of men included in the several classes would be pretty equal. If he thinks so, I can assure him he is most egregiously mistaken.
>
> The method I shall employ for discovering all this is an application of the very curious theoretical law of 'deviation from the average'.
>
> (1869, p.26)

Not *between* two populations, but within a single population there are huge differences in the degree to which individuals possess intellectual ability – the majority falling into the classes near to the norm, fewer and fewer in the classes further from this average, both above it and below it. In other words, intellectual ability is distributed according to the laws of the normal scheme and can be formulated according to its statistical principles. Now this observation may well be "a fact calculated to considerably enlarge our ideas of the enormous differences of intellectual ability between man and man" (ibid., p.36), but its consequences appear somewhat more limited than Galton's grandiose introduction might have led us to expect. No so, however, for in two further operations the possibility will be established for this "fact" to be inserted at the very heart of the contemporary debate on 'the social question' – first the rigorous formulation of the relation between ability and heredity, and second the unification of abilities as a domain of expression of a biological origin.

The principal task of *Hereditary Genius* is to show that the distribution and inheritance of intellectual ability follows the same laws as any other continuously varying ability – intellectual ability will be shown to be transmitted and distributed according to the law of ancestral heredity. This law is Galton's mathematical formulation of the Darwinian theses of continuous variation and blending inheritance. For Darwin and Galton, as we have seen, a population was a group of interbreeding individuals whose characteristics varied by small degrees; the character of any offspring was a result of the blending of the characters of its parents. Galton demonstrated, on the basis of these premises, that a child would receive one half of his nature from the parental generation, one quarter from the grandparents and so on, the contribution of each generation decreasing in a geometric ratio (cf. Galton, 1865). Now these notions of continuous variation and blending inheritance were, for Galton, necessary conditions if the nature and effects of inheritance were to be graspable through statistics. Whilst Karl Pearson was to regard the law of ancestral heredity as a *mathematical* law of equivalent status to those formulated by Newton (cf. Pearson, 1898), for Galton the status of the law was not mathematical but ontological, and ontology and biology were linked in the notion of stock.

Galton used the term 'stirp' for his earliest conception of a reproductively transmitted biological stock which was expressed in all the characters of the individual and remained unaffected by environmental influences during the life of the organism. Darwin, in common with

most writers of his time, did not rule out Lamark-type explanations of the effects of use and disuse and the inheritance of acquired characteristics, despite the fact that he accorded the major source of variation to the process of reproduction. Indeed, as the evidence against the theory of natural selection mounted, Darwin attributed a greater role to such influences, and his particulate theory of pangenesis expressly allowed for them, through the transmission of somatic information via particles to the germ cells. Galton also advocated a particulate form of inheritance, but argued that the particles were laid down in the ovum immediately after fertilisation, and thus were unaffected by circumstances that befell the organism during its life. However where Darwin was concerned with the inheritance of discrete characteristics, Galton operated within the play allowed by the term 'stock' – familiar already to both breeders of horses and readers of Debretts, stock referred not to this or that characteristic but to the general *quality* of a particular line of descent. What Galton effects in the alliance between stock, ancestral law, and the normal distribution of intellectual abilities is thus, exactly, a transformation of quality into quantity. And in this transformation the quantity of intellectual ability is both expression and index of the quality of all the faculties, both mental and physical, indeed of vital energy itself:

> [Energy] is the measure of fullness of life; the more energy, the more abundance of it; no energy at all is death; idiots are feeble and listless . . . Energy is an attribute of the higher races, being favoured beyond all other qualities by natural selection . . . In any scheme of eugenics, energy is the most important quality to favour; it is, as we have seen, the basis of living action, and it is eminently transmissable.
>
> (1883, p.25, p.27)

Thus good stock is allied with vigour and is the principal object of both natural and artificial selection. But this traditional theme of ancestry (alliances, good families, nobility) is actually being transformed here in its strategic reutilisation in a preoccupation with heredity, and it is this transformation which is to place the Galtonian scheme at the centre of a certain strategy for half a century – a strategy which concerns 'the social question' and whose object is not nobility but *degeneracy* – a flourishing, in the heart of our large cities, of a degenerate stock:

> It cannot be doubted that town life is harmful to the town population . . . The proportion of weakly and misshapen individuals is not to be estimated by those whom we meet on the streets. We should parade before our mind's eye the inmates of the lunatic, idiot and pauper asylums, the prisoners and patients in hospitals, the sufferers at home, the crippled, and the congenitally blind . . .
>
> (1883, p.20, p.23)

These wretched figures, lunatics, idiots, paupers, criminals, the sick, are unified by Galton as the effects of a common cause – the deleterious effects of town life upon the constitution, the signs of a degenerate stock:

> It is perfectly distressing to me to witness the draggled, drudged, mean look of the mass of individuals, especially of the women, that one meets in the streets of London and other purely English towns. The conditions of their life seem too hard for their constitution, and to be crushing them into degeneracy.
>
> (1892, pp.395-396)

And it is precisely this group of degenerates, the town dwellers, the inmates of institutions, the criminals, that at the turn of the century form the heart of *the social question.*

The social question

> What man possessed of sense, curiosity or fancy, could gaze unmoved on this mixed mass of poverty, destitution and crime which makes up the lower stratum of our artificial society? How resist the question, what part of all this misery is the result of personal defects and vices – of sloth, unthrift, incapacity; how much of slovenly habits, of dole giving in the rich and less poor, how much of what may be called inaptitude in the State! How is it possible to resist the inquiry whether when more than three centuries ago, our ancestors established a poor law, they ought not rather to have given us a good police force.
>
> (Guy, 1873, p.472)

It would, perhaps, be possible to identify two distinct thematics in discourse on the social since about the middle of the eighteenth century. One has at its core a certain relationship between the organisation of production and the creation of wealth, and constitutes the social for itself from the perspective of the economy. The other has at its heart a relation between State and population and constitutes the social around a question of order, of police. If the former is organised into the discipline of political economy, the latter, from Conring and Petty to. the formation of sociology is organised in the discourse of statistics, inquiries "respecting the Population, the Political Circumstances, the Productions of a Country and other Matters of State" (Sinclair, 1791, Vol.XX, p.xix n; quoted from Cullen, 1975, p.10; cf. Pasquino, 1978). Whether or not this hypothesis has any utility, both political economy and statistics were perplexed, during a period stretching from the debates over the Poor Law in the 1830's to the turn of the century, perhaps even to the First World War, concerning the relationship between two categories which were difficult to reconcile at the theoretical level and difficult to separate at the practical level – the categories of *poverty* and *pauperism.* On the one hand, for political economy, poverty was the necessary and inexorable counterpart of wealth - the outcome of differences in condition, the spur to stimulate the poor to better themselves and the warning to promote industriousness in the middle classes, the source and the space for the expansion of production and the creation of new needs. For political economy, the relation between poverty and wealth was internal to the social order – the question of its elimination was never at stake. On the

other hand there existed not the poor but the pauper, without regular employment and hence without the bonds to the social order which such employment conferred. The category of the pauper functioned as a metaphoric condensation of a series of forms of conduct whose common feature was precisely this refusal of socialisation: mobility, promiscuity, improvidence, ignorance, insubordination, immorality, in short a rejection of all those relations which are so essential in the formation of the social (cf. Procacci, 1978). While political economy recognises the category of pauperism it is nonetheless unable to constitute the pauper as an appropriate object or target for political or social action. It is only towards the end of the nineteenth century that one can begin to see the systematic elaboration of the relationship between pauperism and the economic system, centering around the categories of unemployment and casual labour. For most of the nineteenth century, however, inadequacies of income as such, whether caused by low wages, irregular employment or sickness, could form neither a legitimate object of state intervention nor of economic theory. No overall imbalance could exist between production and consumption, or between the supply and demand of labour. The aggregate wage fund at any given time was inelastic; if workmen were unable to obtain employment it was simply because they tried to sell their labour at too high a price. Gratuitous assistance to such workmen would therefore merely depress the general level of wages, discourage mobility of labour, and encourage reckless procreation incommensurable with the true position of the labourer. Schemes of public employment were similarly futile and dangerous, for they diverted capital from private industry and thereby depleted the wage fund for privately employed workmen. Want of employment was thus either a short term effect of transfer between jobs, for which workmen should provide out of their earnings whilst employed, or a voluntary condition wilfully incurred by those unwilling to accept the responsibilties of labour.

Abandoned by political economy, the pauper will however be the route by which the eugenicist strategy will find its point of entry into a discourse on the social at the turn of the century. For whilst the strictures of political economy had guided the formulation of the New Poor Laws and their principle of 'less eligibility', from the start the pauper was delivered into the hands of another discourse, that of policy. Where the theories of political economy provided no means of calculation with regard to the details of the degree of administration and intervention which was the constant accompaniment of '*laissez-faire*', questions of pauperism and social distress had always been fundamental to a discourse on population and its regulation. And before the notions of human abilities, the inheritance of stock and individual variations will link themselves with these questions, a terrain will already have been established which will provide their condition of possibility. *Firstly* in the formation of 'the urban question', in which pauperism and all that it represents in the way of anti-sociality is focussed upon the towns, and *secondly* in the organisation of this

link between pauperism and the towns around the question of casual labour.

First, the towns. The concentration of the lower classes in the heart of the great cities thrown up by industrialisation was conceived first as a threat modelled on the medicine of epidemics – that is of disease localised not in the limits of the body but in a complex geographical and social space (cf. on this Foucault's (1973) *Birth of the Clinic*, esp. Ch.2). The lowest elements attracted to the towns by the prospect and the necessity of work were concentrated into large and impenetrable masses, isolated from the beneficent influences of civilisation, breeding grounds for all manner of anti-social diseases and dangers. In these colonies and rookeries, vice and immorality flourished undetected and, what was worse, could so easily spread beyond their local confines to infect whole regions of the city. First, a grand scheme of social hygiene was proposed, to break up these enclaves, to expose them to contact with the values of civilised existence, to render them accessible to the social gaze and a social police, to break up multiplicities, regulate the promiscuous interminglings and asocial habits, in short, to socialise them (cf. Jones, 1971).

With the failure of these schemes of street clearance, of model dwellings, of sanitary regulations to effect any reduction in the levels of crime and pauperism in the great cities, questions of pauperism gradually ceased to be posed in terms of social hygiene in which a relation was established between pathology and environment, and came instead to focus upon the activities of individuals, relating character and employment in a dynamic scheme in which casual labour occupied a crucial position. It is, no doubt, possible to identify a number of factors which conspired to produce this centrality of the problem of casual labour in the last decades of the nineteenth century. The 'Great Depression' was in fact a period of rising real wages for the majority of the working class, and the conjunction of high wages in the majority with poverty in a few emphasised the economic and social distinctions between those in regular employment and those in want of such employment – for the first time a conception begins to develop of the *unemployed* as a distinct grouping with specific social characteristics. A certain emphasis and urgency was undoubtedly lent to this question by the growth of direct action on the part of the unemployed, and the activities of Hyndman's Social Democratic Federation, even though, at the level of governmental action such occurences were occasions for raising the question of public order, rather than of social distress (cf. Harris, 1972).

The question of casual labour was increasingly accorded exemplary status in the analysis of unemployment and in the development of a practice of administration; its status repeatedly reaffirmed by the constant discovery of so many casual workers amongst the applicants for relief to the various schemes operated as emergency measures during the last decade of the nineteenth century. And the work of the Statistical Societies, in which questions of administration were the organising

motives for empirical investigation and theoretical analysis, gradually had constructed a systematic link between lack or irregularity of employment and social distress. Charles Booth's massive enquiry into the *Life and Labour of the People of London* focussed this linkage upon involvement in the docks and in other forms of casual labour. In doing so, however, it can be seen to mark an irreversible transformation in the status and function of the concept of casual labour itself.

For if Darwin shattered the timeless space of classical morphology, opening up conceptions of species to the exigencies of time, Booth too, in his modest way, signals a disruption of the question of pauperism and its relocation in a space structured by the succession of generations, by reproduction and change. For where the New Poor Law had operated a rigid distinction between poverty and pauperism, this typology was transformed by Booth's conception of population as a continuous distribution of individuals with varying characteristics, in which classification had a status which was both arbitrary and indexical. Thus the classes into which Booth divided the population of London signify a location upon a continuum, rather than expressions of a fixed typology of characters. And variation and distribution enter here, for the location of any individual upon this continuum was the outcome of a dynamic interaction between character and environment, an interaction in which a notion of fitness is deployed in a sense far from Darwinian, made possible by its operation as a metaphor for the existing linkage between pauperism, crime, indigence and social danger.

Four classes, in Booth's study, constitute together the thirty five per cent of the population in poverty: D – the small regular earners (14½%): "the better end of the casual dock and water-side labour"; C – the intermittant earners (8%): "on them falls with particular severity the weight of recurrent depressions of trade . . . here may perhaps be found the most proper field for charitable assistance", provided, of course, that such assistance is conditional upon the thrift of the recipients; B – the casual earners – very poor (11¼%): "the ideal of such persons is to work when they like and play when they like; these it is who are rightly called the 'leisure class' among the poor – leisure bounded very closely by pressure of want, but habitual to the extent of second nature"; A – the lowest class (estimated at 1¼% but "these people are beyond number"): they are the occasional labourers, loafers and semi-criminals, "Their life is the life of savages, with vicissitudes of extreme hardship and occasional excess . . . They render no useful service, they create no wealth: more often they destroy it. They degrade whatever they touch, and as individuals are perhaps incapable of improvement . . . " (1892-97, Vol.1, pp.28-62).

A continuum of social distress, an amalgam of indices of income, conditions of life, and circumstances of employment, tied together by individual character. And the location of any individual on this

continuum was an effect of the progressive and cumulative interactions of all these – Booth's work thus marks the shift from the 'tableau of pauperism' to the 'cycle of depravation'. Setting the categories of pauperism and poverty in a continuous relation, the evils of town life become progressively represented as a process – a dynamic theory not simply of urban vice but of urban degeneration. The towns come to act as the foci for a whole system of deterioration, a sink down whose drain the quality of the population is fast disappearing: immigration from the country to the towns, gradual deterioration over several generations, weakening of constitution both moral and physical, casual labour, and finally entry to the lowest class of all – the unemployables. From pamphleteers like Arnold White (cf. *The Problems of a Great City*, 1886) to administrators like Llewellyn-Smith (cf. 'The influx of population' in Booth, op.cit.) the theory of rural immigration and urban deterioration was the principle around which the social question was organised (6).

Time and change, variation and competition: the closed space of pauperism is opened up through a systematic elision of evolutionary, moral and economic discourses. Within such an alliance, the question of casual labour occupies a crucial place: the site, *par excellence*, of competition and the struggle for survival, it also is situated in the position of a relay, for it operates the crucial mediation between the improvable and the residuum, a no man's land between the inside and the outside of civilisation but spiralling those who enter it almost inexorably in one direction – towards unemployability. We can see, in this discourse, the gradual reorganisation of conceptions of the residuum and the threat which it poses around the category of the unemployable, yet the signification of this category is productively ambiguous. 'Unemployable' is a series of forms of conduct or behaviours which are the outward and visible signs of an inward state of character, yet this state of character is both cause and effect – cause to the extent that it is the explanation of why certain individuals come to occupy the location of unemployability; effect to the extent that it was induced as a result of the demoralisation coincident upon casual labour and the influences of the environment of the casual labour market. From Booth to Beveridge, proposals for decasualisation had as their object the re-establishment by administrative means of the boundary between the employable and the unemployable, bringing to the former the benificent and educational discipline of regular employment, coupled with full civil rights, exposing the latter for the harsh but necessary action by the State. The residuum of unemployables becomes the focus of all those forms of vice that infect the towns and flourish in the margins of civilisation – vagrancy, crime, prostitution . . . – linked around the defect in character of the unemployable individual, a defect both physical – poor eyesight, bad hearing, small size, scrofula, phthisis – and mental – in both intellectual and moral faculties. And intervention is demanded which would have the effect not only of breaking the downward spiral of degeneration, but also of removing the perpetual spot of infection of the body politic, of providing, for the social

question, a final solution.

Now it is possible for us to see the point where the strategic link between a certain theory of social administration and a certain conception of human abilities can be made – the strategic link which is eugenics. In 1901 Galton gives the Huxley Lecture to the Royal Anthropological Institute, and he provides us with a convenient model of the systematic relationship between population, distribution and norm, a certain conception of inheritance and the question of urban degeneracy that comprises the eugenicist strategy. Galton begins by suggesting that Booth's distribution of the population into various classes follows precisely the pattern which would be predicted by the Normal Law of Frequency, and proceeds to demonstrate that by ordering these findings around the norm and applying the law of probable error, civic worth can be seen to conform to the distribution expected of any other inherited trait. Eliding civic worth with the conception of stock or constitution, Galton is then able to pose the question of the inheritance of such a trait in terms of the theory of blending inheritance and the law of ancestral heredity in a way with which we are already familiar. The appropriate conclusions are self evident: the improvement of the human stock is possible because the laws by which it is distributed and inherited are known. Conscious control must be exercised by politicians and administrators first of all to improve the breeding of the best through diplomas of civic worth entitling the holders to special privileges, patronage by noble families, provision of cheap houses and so forth. But not only positive eugenics is called for, negative eugenics must also be practiced to prevent the breeding of those in Booth's class A and B, for example "habitual criminals" should be "resolutely segregated under merciful surveillance and peremptorily denied opportunities for producing offspring" (1901, p.663)

The relation between population, distribution and norm thus allows Galton to link heredity and degeneracy in a rigorous statistical relationship, mapping a distribution formed through an alliance between economics and morality onto a distribution constructed according to the natural laws of large numbers. It is not surprising that Galton, in 1907, is able to deliver a lecture entitled 'Probability, the foundation of eugenics' in which the first half is devoted to the calculation of the degree of mischief which can be associated with classes of person afflicted with specified degrees of degeneracy in order to examine the justification for taking drastic action against their propagation; the second half to an exposition of the means of statistical computation of variability, medians, standard deviations, binomial series, indices of correlation and normal curves. For eugenic discourse operates through systematically grafting together three discourses implicating a conception of population – population statistics, population genetics and population regulation, a grafting facilitated by the rich and multiple meanings of certain key terms – population, distribution, deviation and norm. Despite the apparent brutality of this operation, this strategy

will have an important part to play in the formation of certain practices of social administration and principles of legislation before it is finally supplanted by a schema which is richer and more extensive. And it will be very largely within the space of this strategy that two questions which especially concern us here will be resolved – the question of the feeble minded and the question of mental measurement. But the questions themselves will be formed upon a terrain in which eugenics is only one of a number of strategies in play.

Efficiency and deficiency

In the first two decades of this century it is possible to identify a displacement in the formation of the social question which will establish a terrain upon which the eugenic strategy can operate productively. This displacement will bring to the fore a particular problem of efficiency and deficiency, will radically transform the nature and importance of conceptions of the mentally defective and will provide the conditions within which a psychological complex will establish itself within the practices of social administration. This displacement can first of all be seen to reactivate and reformulate conceptions of the relations between political power and the forms and means of organisation of the population.

No doubt the emergence of population – in the sense of an organised, regulated and policed domain – as an object of political theory, and of practice of State, can be traced back to the Greeks (Plato's *Republic*), to the seventeenth century (theories of *raison d'etat* and origin of science of police, cf. Pasquino, 1978), to the formation of a Europe of nation-states in the mid nineteenth century (cf. Hobson, 1902) and to many other sources according to the purpose of ones analysis. It would appear that the central point at issue for seventeenth and eighteenth century debates on population concerned whether the State should encourage growth in numbers which would inevitably increase its wealth or whether a limit existed beyond which further increase would create misery. Population, as Foucault has pointed out (1976, Ch.5) makes its appearance here, not just as a collection of subjects, but as an entity with its own specific characteristics – rates of birth and death, life expectancies, fertilities and so forth. Malthus' attempt to formulate the principle of natural limits in terms of the contradiction between a geometric increase in population and an arithmetic increase in food supply shares with earlier conceptions two features which will be reformulated in the debate at the turn of the nineteenth and twentieth centuries. Firstly, the old problematic of population, whilst linked with the question of competition between states, had as its object the maintenance of a certain equilibrium; in the debates we are concerned with we will see the link between population and competition posed in terms not of stability but of change. And secondly, whilst the old problematic concerned population as an homogeneity, we will now see the emergence of a certain question of selection. In other words, the question of population is now reformulated in terms which construct a rather different connection between external relations between states and internal organisation of states. For within the

concern with imperialism, this connection will be posed in terms borrowed from Darwin, but in which the notions of 'struggle for existence' and 'survival of the fittest' will be transformed in their utilisation. For fitness will be used as a single category, allowing the construction of a linear scale upon which nations and individuals may be ordered and ranked, and their differential performances explained (7).

Those who advocated an imperialist policy, from polemicists like White (1901), through eugenicists like Pearson (1901), Fabians like Shaw (1900) and Tariff Reformers like Chamberlain (1903), saw the major form of international conflict as a struggle between a number of great states, a struggle for survival in a world of competition for scarce resources in which the fittest would survive and the weakest would go to the wall. Despite the fact that the regular use of Darwinian metaphors covers considerable conceptual and political discrepancies between these positions, this mode of argument occurs not simply in the field of speculative political philosophy, as in, for example, the writings of Spencer (cf. 1972), but as a functioning element within the forms of political calculation engaged in by definite social forces. In such calculations, concepts of imperialism operate in terms of a double relation articulated upon the nation. A nation is a bounded entity with a certain character engaged in an *external* struggle whose outcome was determined by its *internal* features. Internal fitness determines the outcome of external competition – it was in this way that questions of Britain's 'decline as a world power' could be reinterpreted in quasi-Darwinian terms and the debates concerning forms of government and military organisation reoriented around the question of efficiency.

If notions of efficiency can be seen to structure a diverse field of debate on questions of government, industry and social organisation, as has been argued (Searle, 1971) it is important that we see the category of efficiency here as neither a function of an externally imposed explanation – a hidden principle governing many discourses – nor as a single concept utilised in many domains in a consistent manner. It has, rather, a tactical function in these discourses – it lends them a coherence not because of the consistency of its meaning but precisely because of its ambiguity. Its metaphoric functions serve as a principle of integration at the same time as its diverse significations permit the organisation of controversy. Thus whilst the argument concerning the nature of efficiency and the means by which it is to be recognised is interminable, nonetheless it is on the grounds of efficiency and its correlates in relative fitness of nations that discourses will attempt to establish their claims to truth. Hence, for example, Britain is seen as declining relative to Germany in the international struggle for survival, and explanations are provided in terms of the lower efficiency of its form of government, military organisation, educational system, means of dealing with the social question (cf. Shadwell, 1906). It is within this field that the debacle of the British effort in South Africa, during the second Boer War, is able to function as both demonstration of the

truth of the linkage between efficiency, fitness and survival, proof of the British decline and occasion for urgent intervention.

The link between survival, efficiency and fitness functions so as to privilege a certain conception of the appropriate political means of intervention in the organisation of the population – competing strategies operate within that field which has been termed 'biopolitics' (Foucault, 1976, p.183). And it is here that a connection will be established between the question of national efficiency and the problem of mental deficiency within the context of a programme of social rationalisation. In terms of the object of this paper we must accord priority to two questions – the decline of the birth rate and the deterioration of the national physique.

All the major European nation states suffered a decline in their birth rates in the last half of the nineteenth century, a decline whose discursive effects, it should be noted, were themselves conditional upon a certain apparatus of censuses, demographic statistics and so forth which had only recently been established (for the origins of the census in Britain see Cullen, 1973). And calculations revealed that Britain's decline had not only been worse than any other nation but France, but its recovery had also been slower. However, with some exceptions, the debate over this decline did not hark back to the theme of a link between numbers and wealth, but centred upon the effects of this decline upon the quality of the population, upon fitness. For, as all the evidence demonstrated, this decline in birth rate was not evenly distributed across the population: whilst the birth rate of the lower classes was remaining stable, that of the middle classes was reducing rapidly. The causes adduced for this phenomenon are of interest in their own right – not merely the rise of feminism and the movement for women's emancipation which was causing women of the middle classes to abandon their proper role as child-bearers and homemakers, nor simply the desire of women to enter employment, or the willingness of the well-off to put selfish interests and standard of living above patriotic duty to bear children, but also a whole medical discourse upon the deleterious effects of education upon female fertility, especially at the time of puberty or during menstruation when it diverts sorely needed bodily energy to the mind and permanently reduces fecundity. However more relevant for our present concerns are the consequences of such a differential reduction in the birth rate.

The thesis that the transformation of a species is the result of differential reproductive advantage clearly can be applied to situations where this advantage accrues by means other than random variation. If those who limit their fertility are the well-off, the prudent, the thrifty, the educated, then it follows that it is the improvident, the poor, the ill-educated who will effectively be at a reproductive advantage. Indeed Galton had already drawn attention to precisely this question when discussing the effects which would follow if Malthus' exhortation to limit population by delaying the age of marriage were to be acted upon

(e.g. in 1883, pp.318-319); for Galton this would merely exascerbate the danger already faced by the higher civilisations – that they tend to multiply from the lower, and not the higher specimens of the race. By 1906, the Biometrics Laboratory of Pearson's Department of Applied Mathematics at University College was to put the debate upon an unequivocally scientific basis. David Heron, aided by the newly developed techniques of correlational analysis, was able to utilise census data in order to determine the degree to which the reduced fertility of English wives was associated with social status or social problems. Heron's conclusions were alarming:

> . . . there is a very close relationship between undesirable social status and a high birth rate . . . Nor is the higher birth rate of the undesirable elements compensated by the higher death rate . . . The relationship between inferior status and high birth rate has practically doubled during the last fifty years . . . the birth rate of the abler and more capable stocks is decreasing relatively to the mentally and physically feebler stocks . . .
>
> (Heron, 1906, p.22)

If Heron's empirical investigation appears to confirm what eugenic theory has predicted – the lowest twenty five per cent of the adult stock is producing fifty per cent of the next generation – this is not the effect of any new evidence but simply of the re-utilisation of existing data within an interpretive schema whose own principles were not subject to disproof. And indeed these findings were inserted within a discourse which had, for over twenty years, already known them (e.g. Pearson, 1904, pp.155-160). Arnold White put the matter with a certain directness in *The Problems of a Great City:*

> Criminals and pauperised classes with low cerebral development renew their race more rapidly than those of higher nervous natures. Statesmen standy idly by . . . Dynasties of criminals and paupers hand down from generation to generation hereditary unfitness for the arts of progress and all that brings greatness to a nation, and engage themselves in a warring against all forms of moral order . . .
>
> (1886, p.49)

If more evidence of this decline in the fitness of the population and of its deleterious consequences were required, it was supplied by the results of the recruiting for the second Boer War of 1899-1902, for the belief in the appalling physical status of these recruits, to the extent that they were too unfit, too physically inefficient to bear arms in the competitive struggle between nations, was accorded the status of fact (8).

Within eugenicist discourse, where the alliance between population, variation, heredity and degeneracy was already established, these events functioned as confirmation of the theoretically predicted deterioration in the national stock. And unified in the notion of stock were all those elements which, for Galton, had been the

expressions of a certain essential energy – degenerate stock was the essential unifying pathological entity whose expressions were criminality, pauperism, lunacy, inebriety, prostitution, idiocy – all those threats to the social order which were merely different forms, the effects of circumstance in modifying necessity. Not only was tainted and degenerate stock given reproductive advantage by the limitation of fertility by the more advanced and developed sections of the population, but this advantage was consolidated by the suspension of natural selection within the population itself. The familiar critique of charity and philanthropy in encouraging precisely that state of pauperism which it wished to eliminate was reformulated by the eugenicist strategy – medical developments, hygienist schemes of sanitary improvement, indiscriminate handing out of doles had suspended natural selection within the population and encouraged the flourishing of a mass of carriers of tainted stock in the hearts of the great cities. Feeble constitutions made them easy prey for such diseases as tuberculosis, scrofula, phthisis, low levels of morality made them prone to promiscuity, inebriety and all forms of criminality, unable or unwilling to engage in productive employment or even to carry arms for their country. A drag on Britain's commercial efficiency in peacetime, a threat to her survival in war, they dragged down the average fitness of the British race and put her at a disadvantage in the international struggle for survival, where the law of natural selection still held sway. If charity and philanthropy had so changed the ethical views of the British people that they would not tolerate a return to the primitive forms by which the unfit were eliminated, this process must be taken under conscious control. The pauper class must be prevented from reproducing their kind, by segregation or sterilisation, the good stock must be encouraged to breed. Only thus could the wholesale decline of the British race be prevented (cf. MacKenzie, 1976; Searle, 1976).

We see here, in these eugenicist texts, an extension and development of that schema which Galton proposed in the re-utilisation of Booth's data on the classes of the population in London. But in this extension, we also can see a reorganisation of the terrain upon which the debate over deterioration will take place. For one of the conditions for Galton's operations upon Booth was precisely the ambiguity upon which the early discourse on urban degeneration sustained itself, in which the degenerate character functioned as both cause and effect of the occupation of a particular milieu. Conditions of life, in this discourse, are ethicalised in their nature and in their effects, and hence no contradiction is apparent between the proposals for reform of milieu and the advocacy of the use of detention colonies for unemployables. Not that this ambiguity excluded the discussion of the effects of heredity, for early applications of conceptions of heredity to human populations focussed upon the inheritance of acquired characteristics and were deployed within strategies which included environmental reform. It is precisely this play in the discourse which allows the eugenicists to re-utilise the same data in the context of a directly opposed strategy, a strategy which does not transform the point of intervention, which

remains between the employable and the unemployable, nor the object of intervention, which remains that of attaching the improvable to the social order and segregating the residuum. Yet gradually what we can see is a clarification of the implications of the hereditary argument as it begins to exclude the transmission of acquired characteristics, an unravelling of the confused play of causes and effects, which allows the crystallisation of the strategic opposition between eugenicists and environmentalists in terms both of the forms of explanation which they provided and the forms of social intervention which followed from them (9).

In the question of the formation of a functioning psychological complex in England, the eugenicist strategy plays a double role. Firstly it is within the forms of explanation and intervention which it proposes that the pioneers of individual psychology operate. If Karl Pearson, Charles Spearman and Cyril Burt were all party to the eugenicist cause, as were the leaders in the field of theory and practice concerning mental deficiency, Alfred Tredgold, Mrs. Ellen Pinsent and so forth who we will encounter presently, this is not, as we shall see, a question of individual biographies, of influences, of intentions or of class or sectional interests but of the regular operation of a particular discursive field. And secondly, the eugenicist strategy was effective as one of the protagonists involved in the uneven and contradictory tactical compromise within which a certain practice of social administration was formed. And it was this practice which opened the space within which such a psychological complex became possible. Yet it was one protagonist only, for however prolific the eugenicist texts, however fascinating in their naive rhetoric, the events that followed were in no sense a simple realisation of their desires.

The opposing strategy of social hygiene found its spokesmen in the doctors, and in a certain tradition of social investigation which stressed the interaction of environment and health. Thus for Rowntree the condition of the Boer War recruits at York, Leeds and Sheffield was the effect of the falling of their living standards below the minimum level required to maintain physical efficiency – far from being a question of stock, the problem was one with which medicine was familiar and competent (1901, pp.216-221). It is hardly surprising, then, that this medicalising strategy should have been taken up in the *British Medical Journal* in their demand for an enquiry; referring to Rowntree and Booth's studies they argued in a lead article that, if the stunting effect of work upon children was combined with lack of sunshine, outdoor exercise and fresh air, and if family earnings were insufficient to obtain the minimum necessities for the maintenance of physical efficiency it was "easily conceivable that the British race will deteriorate (1903, p.208). If the eugenicist strategy proposed segregation and sterilisation of those recalcitrant elements who were in society and yet not of it, physically, mentally and morally incapable of accepting its civilising embrace, then the medical strategy can be seen as centering upon an operation of attachment – a labour of rebuilding the links

between society and the pauper harking back, no doubt, to the desire that motivated the early schemes of urban hygiene through town planning, but now modelled on the pattern of a medicine of the clinic rather than of the epidemic. The Report of the Interdepartmental Committee on Physical Deterioration, set up under pressure to investigate this question of deterioration and its prevention, operated within this medical strategy. Unfitness, it discovered, was not due to degenerate stock but to environmental conditions, lack of income, hygiene and education and hence of proper nourishment. Eliminate these and unfitness too will disappear:

> There is . . . every reason to anticipate RAPID amelioration of physique so soon as improvement occurs in external conditions, particularly as regards food, clothing, overcrowding, cleanliness, drunkenness and the spread of common practical knowledge of home management.
>
> (1904, p.14)

Socialisation through instruction and moralisation of the parents, education and continuous medical inspection of the children, a process which will involve the breaking down of the opaque masses of the poor into visible units, bringing each within the social gaze, into a relationship with society, and hence into receipt of its benefits. The hitherto dark corners of our cities will be opened up to light through the agency of the child and through the institution of the school – for if the school, through compulsory education, has played such a large part in the presentation of the problem of the limits of civilisation within society itself, then the school will be the place whence civilisation will attempt its work of reclamation. And in this labour of socialisation the pathological provides precisely the point of entry for a productive strategy which will extend beyond a labour of reclamation of the unfit into a labour of formation of normality itself.

Two strategies then, segregation and socialisation, apparently in opposition. It is in the resolution of the tension between them that we will see the formation of the field and function of a psychological complex in which the question of the mental defective and the methods of mental measurement will play an important part. For in fact these strategies are by no means necessarily exclusive from the point of view of power, or from the point of view of administration – indeed they function as complementary elements within that scheme of power which M. Foucault has termed 'disciplinary', that is, a form of power which:

> . . . fixes; it arrests or regulates movements; it clears up confusion; it dissipates compact groupings of individuals wandering about the country in unpredictable ways; it establishes calculated distributions.
>
> (1977, p.219)

If we are to illustrate this resolution in a single statement then none serves our purpose better than the work of the Fabians, in particular

of Sidney and Beatrice Webb. Let us take the scheme elaborated in the Minority Report which was submitted by the Royal Commission on the Poor Laws and the Relief of Distress, in 1909. What is important about this scheme is not its realization, though its failure in this respect may be only relative, but the extent to which it provides a certain ideal expression of the relation between a certain form of organisation of social life and a certain science of individuation and assessment, a relation which is, it should be noted, not simply the prerogative of the forces of reaction, yet whose desire for the scientific management of the social body has, perhaps, its closest parallel in the work of Taylor.

When Sidney Webb was asked to lecture to the Eugenics Society on the Minority Report he outlined its policy in six points:

> (1) Deliberately altering the social environment so as to render impossible (or at least more difficult) the present prolific life below the National Minimum, or the continuance at large of persons who are either unable or unwilling to come up to the National Minimum Standard of Life;
> (2) "Searching out" every person in default irrespective of his destitution or his application for relief;
> (3) Medical and other inspection of all infants, school children, sick or mentally defective persons, and all who otherwise need public help, so as to discover the unfit, as well as to remedy their defects;
> (4) Segregation, permanent or temporary, of many defective persons now at large;
> (5) Enforcement of the responsibilities of parenthood at a high standard, and hence discouragement of marriage among those unable or unwilling to fulfill them; and
> (6) Taking care that no one sincerely desirous of fulfilling his social responsibilities shall, by lack of opportunity, be prevented from doing so.
>
> (1910, pp.240-241)

Whilst Webb wished to assure his audience that the report was constructed "on strictly eugenic principles", I think we can see here the resolution of the two strategies which I spoke of earlier, a resolution which entails a discrimination between the socialisable and the residuum, the former being subjected to a regime whose object is attachment, the latter to one whose object is segregation. The fulcrum of this schema is the social apparatus which will provide the technological means for the necessary regulation, which will enable the establishment of a calculated distribution. It is precisely on this note of discrimination that the Minority Report commences – a condemnation of the Poor Laws for their use of the General Mixed Workhouse, with its promiscuous intermingling of the sick, the paupers, the feeble minded such that any scientific treatment is impossible. For whilst the eugenicists would see here only the different manifestations of a single degeneracy of stock, for Webb the *sine qua non* of social science is discrimination. First, and crucially, the separation between the able-bodied and the non able-bodied. For the latter, medicine has already provided the

model, for the aim of the Webbian strategy for the destitute is not relief but treatment. Drawing upon the proposals for school inspection made by the Interdepartmental Committee of 1904, a series of further discriminations are made – each non able-bodied pauper is to be inspected, classified, distributed to the appropriate authority for specialised treatment: pauper children to the new Local Education Authorities, lunatics to the Asylum Committees, the sick to the health committees, the feeble minded to a new committee which will ensure their segregation in conditions where breeding is not possible.

The substitution of treatment for relief can, however, not limit itself to the evident medical pathology of the non able-bodied, it must extend itself to the social pathology of the able-bodied unemployed. The fulcrum of the operation on this new and fertile ground will be the labour exchange. Here the Report draws upon the scheme proposed by William Beveridge (1909): the labour exchange will rationalise the labour market, eliminate futile drifting and wastage in periods between work and, coupled with decasualisation, subject the market for employment to the order and regulation imposed by visibility. Random straying around the countryside will now be eliminable: "So long as the workman in search of a job has to wander, it is impossible to distinguish between him and the Professional Vagrant . . . With a National Labour Exchange organised in all towns . . . there will cease to be any excuse for wandering in search of work . . . If this were done it would be possible to make all the minor offences of Vagrancy . . . occasions for *instant and invariable committment* by the Justices . . . to one or other of the reformatory Detention Colonies which must form an integral part of the system of provision . . . " (ibid., pp.1188-1189). Thus labour exchanges not only allow labour to be exchanged, but allow the various forms of lack of employment to be regulated, analysed, causes sought and treatments deployed. But, before the treatment must come the assessment; unemployment may affect the population as a whole and result from a generalised condition of the market, but it nonetheless operates by selecting out individuals – why these particular individuals and not others:

> The first thing to be done is to "test" them, using the word in its proper sense . . . [whatever the general causes of unemployment] it is inevitable that the *particular individuals* who, in that crisis, find themselves the neglected of all employers should be capable of improvement, either physical or mental. Which of us, indeed, is not capable of improvement by careful testing and training . . . The National Authority dealing with the Able-bodies requires, therefore, what we might almost term a Human Sorting House, where each man's faculties would be tested to see what could be made of him; and a series of Training Establishments, to one or other of which the heterogeneous residuum of Unemployed would be assigned.
>
> (ibid., p.1204)

Individualise, discriminate, test, train, reform according to the demands

of the social and release back into the community the previously unemployed, now trained to the highest levels of physical and mental efficiency to which they can be raised, and accustomed to the salutory discipline imposed by a regime which would be the double of employment, but rather more severe, and hence, still, in keeping with the principle of less eligibility. In the Webbian schema, socialisation is the *penalty* for neglecting ones obligations to society:

> So long as he commits no crime, and neglects none of his social obligations – so long as he does not fail to get lodging, food and clothing for himself and his family – so long as his children are not found lacking medical attendance when ill, or underfed at school – so long, indeed, as neither he nor his family ask nor require any form of Public Assistance, he will be free to live as he likes. But directly any of these things happen, it will be a condition that the husband and father, if certified as Able-bodied, shall be in attendance at the Training Establishment to which he is assigned. If he is recalcitrant, he will be judicially committed to a Detention Colony.
>
> (ibid., p.1206)

If the eugenicist schema is somewhat crude, oversimple, undiscriminating, if the hygienist programme still has something of the philanthropic hesitancy about it, the Webbian strategy combines the two in a productive relationship. Now we know, of course, that the Liberal Governments of 1906 to 1914 did not implement the Webb's proposals; a scheme was established, no doubt on grounds which had something to do with financial economy and legislative practicability, which operated rather differently. In the society of insurance which began to be formed, socialisation was not the penalty for recalcitrance, operating post hoc, on the contrary the attachment of the individual to society is the norm and the population is constituted, in a continuous process, not merely as citizens of the State but as its children and its employees. And this strategy will itself be extended and transformed as a different mode of management of the national economy emerges – the formation and reformation of the social is a continuous operation, obeying no single principle and subject to no final resolution. Perhaps this is related to the fact that its history is the history of its failure. In any event, it is precisely because of this unevenness that this discussion of the Webbs has been pertinent here. For if the Webb's schema was not itself implemented, the strategy which is represented and the techniques which it necessitated were by no means a cul-de-sac in the formation of our present. On the contrary, we can see here a model articulated of the alliance between the operation of law to establish a regime which relies upon administrative regulation of the *population*, and the necessity for the simultaneous operation of a technology and a knowledge in which the *individual* is constituted as object and objective. It is here that we can see the space emerging within which a psychological complex will be able to install itself, a process in which the question of the mental defective and the techniques of mental measurement will play an important role.

The discovery of the feeble-minded

> Of the gravity of the present state of things there is no doubt. The mass of facts that we have collected, the statements of our witnesses, and our own personal visits and investigations compel the conclusion that there are numbers of mentally defective persons whose training is neglected, over whom no sufficient control is exercised, and whose wayward and irresponsible lives are productive of crime and misery, of much injury and mischief to themselves and to others, and of much continuous expenditure wasteful to the community and to individual families.
>
> (Royal Commission on the Care and Control of the Feeble-minded, 1908, Vol.8, para.9)

If, as I have argued, it is necessary to regard the formation of a certain practice of social administration and a certain conception of poverty, of pauperism, and of unemployability, as the outcome of a series of tactical compromises between distinct strategies, it would be tempting to regard the establishment and the report of the Royal Commission on the Care and Control of the Feeble-minded (hereafter simply 'the Commission') as a limited realisation of but one of these strategies, the eugenicist's one success. Indeed, a convincing genealogy could be constructed along these lines. As we have seen, questions of the distribution and variation of human abilities occupied a central position in the eugenicist strategy, both in a certain sense as its origin, in the work of Galton, and increasingly in the first decade of the twentieth century as its organising principle. For the eugenicist, the mental defective progressively becomes the archetypal representative of the deterioration of the race, the scientific corollary of the notion of character which links all those behaviours in which degenerate stock may manifest itself: immorality, criminality, indigence, inebriety, vagrancy, prostitution, unemployability. Well known to run in families, the defective is the proof of the hereditary transmission of degeneracy, though initially in that strange amalgam of cause and effect, transmitted and acquired characteristics, necessary and auxilliary causes (cf. Ireland, 1877, esp. Ch. 3). As congenital incapacity to receive the beneficent influences of civilised life, defectiveness may thus function as an explanation for all the behaviours which constitute degeneracy. Impermeable to the imprecations of morality, the mental defective is promiscuous, prolific, incapable of voluntary limitation of fecundity and hence an index of the malign consequences of differential fertility. Unsocialisable, the defective functions as the justification for permanent and compulsory segregation and sterilisation.

However, to accept such a construction which suggested that what was involved here was a single campaign which obtained a hold on the real through its insertion in some 'moral panic' would make it impossible to understand certain questions concerning the discursive operations which are involved in the arguments deployed by the Commission, and the recommendations which it advances. And this, in its turn would prevent us from understanding the characteristics of the terrain upon

which a psychology of individuation and measurement was to form. A number of overlapping and mutually imbricated series are involved here, in which the mental defective is constituted not simply as the threat of the eugenicist discourse, but also respectively as a *challenge* to science and philanthropy, as a *burden* to the nation and those who produce its wealth, and as an *obstacle* to the operation of a universal system of education.

The first asylum for idiots in England was founded in Highgate in 1847. Its brochure proclaimed the discovery that had provided its inspiration: "We have laboured under the appalling conviction that idiocy is without remedy, and therefore we have left it without help. It may now be pronounced, not as an opinion, but as a fact, a delightful fact, that THE IDIOT MAY BE EDUCATED" (quoted in Jones, 1972, p.183). This "delightful fact" had been discovered virtually simultaneously by Saegert in Germany, Guggenbühl in Switzerland and Seguin in France, and it is Seguin's elaboration of a systematic medico-pedagogy which will provide the model for attempts to educate the idiot (10). For Seguin this education is *socialisation:* the idiot is one isolated from the social in virtue of cerebral incapacity, deprivation of stimuli to the senses or by some combination of mental and physiological defect, the function of training by the physiological method is to re-open these linkages between the idiot and society. And such a labour of socialisation is inspired by philanthropy – it is a bringing of the benefits of civilization to those deprived of them. Hence these philanthropic endeavours, which spread rapidly in England, centred upon the improvable idiot – institutions carefully selected those admitted, charged fees and explicitly excluded paupers. And it is precisely these pauper idiots who are the focus of a second discourse on idiocy which emerged towards the end of the nineteenth century, in which the idiot is first constituted as a *burden*, and later as a *threat.*

The relations between pauperism and idiocy are first posed externally: for poor families the additional burden of caring for an idiot child could be so great as to drag them across the fragile boundary which separates poverty from pauperism, and turn the whole family from an asset to a burden upon the nation. And additionally the pauper idiot is himself a burden. The Lunatic Asylums Act of 1853 required that the justices of each county provided an asylum "for the pauper lunatics thereof", where the word "lunatic" included every person of unsound mind "and every person being an idiot"; despite the fact that the Act in fact did not prevent the provision for these idiots in separate institutions, only one authority, London, had made such provision on any substantial scale, with the building of the Darenth training schools near Dartford in 1875. Thus in 1877 the Charity Organisation Society's Special Committee on the Education and Care of Idiots, Imbeciles and Harmless Lunatics estimated that two thirds of these persons in England and Wales were chargeable to the poor rates, and yet of this total of almost thirty six thousand, hardly any were in receipt of specialised treatment. The remainder were promiscuously intermingled

in the public workhouses, in lunatic asylums, and in prisons, as intermingled as had been those French idiots who forty years earlier Seguin had singled out for special treatment. The Charity Organisation Society similarly urged special treatment for idiots, imbeciles and harmless lunatics and the application to them of a special means of training based upon the education of the senses, yet this recommendation was urged not on the ground of philanthropy but *economy,* economy both financial and social. For the idiot is, in a single movement, triply implicated in the cycle of pauperism – once for the entail which he places upon his family, disadvantaging them in the struggle for existence, an extra weight forcing them down the spiral to the workhouse; again for the threat which he himself represents, impenetrable to civilisation and yet roaming free within it; yet again for the waste of useful labour which, whilst untrained, he represents.

Despite the Idiots Act of 1886 reaffirming the ability of public authorities to make separate provision for idiots, which resulted from the acceptance of the report of the Charity Organisation Society in principle, and distinguished between "idiots and imbeciles" and "lunatics", the Lunacy Act of 1890 completely overlooked the distinction, stating (in Section 341) " 'Lunatic' means an idiot or person of unsound mind". Before the link between mental deficiency and pauperism will move to the centre of the debate on social administration it will have to be reformulated, and this reformulation will revolve around the category, not of idiocy or imbecility, but of feeble-mindedness. The idiot, from Pinel, through Seguin, via Lombroso to the Charity Organisation Society is visible, clearly marked by physical signs and external stigmata, he may pose a problem of order, a problem of treatment or a problem of pedagogy but he poses no problem of detection. As the category of feeble-mindedness emerges, a transitional stage is introduced between the normal and the pathological and idiocy begins to lose the immediate links with the surface of the body. The body gradually loses its adequacy as representation of its inner reality, and idiocy may no longer be deciphered by a reading of signs inscribed upon its surface. In the category of feeble-mindedness, idiocy will progressively be hidden from view, hidden *in order to be discovered.* It is this operation which will provide the pertinence for a psychology of individual differences and a method of mental measurement.

Perhaps this change is first clearly marked in the context of education (11). For the institution, in the 1870's, of a system of universal education, both free and compulsory, created a new problem on a generalised scale, filling the schools with crowds of children who, for a whole variety of reasons, could not be easily included within its apparatus or its operations (cf. here Donzelot, 1977, p.119ff.). Those figures who occupied such a privileged place for sensationalist philosophy (12), present now a different sort of problem. Firstly those whose physical disabilities made them unable to receive the sensory input upon which education rested – the blind, the deaf and the dumb. But also those who, whilst apparently fully provided with the

channels for educational input, nonetheless resisted the socialising aspirations of the school, either actively – through rebellious behaviour which could not be contained within the disciplinary order essential for the pedagogic exercise – or passively – those who, for some unknown reason appeared unable to learn the lesson of the school, that is the class of children whom the Royal Commission on the Blind, Deaf and Dumb termed, in 1889, the 'educational imbeciles', or more simply the feeble-minded.

The term 'feeble-minded' gradually came, in England, to designate those who, whilst not committable to an asylum under the various lunacy laws, nonetheless are sufficiently weak minded to be incapable of receiving the benefits of socialisation in general and of education in particular (e.g. Shuttleworth, 1888; Charity Organisation Society, 1893). The normal and the idiot now appear as points upon a continuum; between the normal and the committable there exists a sizable group who, left in society but unsocialised, must constitute a continuous potential for degeneration, and yet whom science has demonstrated the possibility of improving through training. And if this question is general, it is all the more pressing in the case of the pauper child, as the Poor Law Schools Committee discovers in 1896 when it finds that so many of its children are of the feeble-minded class. A whole campaign was waged on behalf of this unfortunate class – Dr. Francis Warner investigated 100,000 school children and found one per cent to be defectives (1895); the Charity Organisation Society exerted pressure for political action upon Members of Parliament, and sponsored the formation of the National Association for Promoting the Welfare of the Feeble-Minded; the London School Board, concerned about the cost of the special schools which it had set up for such children, urgently requested larger grants (cf. Pritchard, 1963, pp.132-151). Within this campaign three problems are formed – how are these children to be detected, how are they to be socialised so that their moral senses are awakened and they become resistant to the temptations of vice and crime, and what is to become of them when they are no longer of school age?

We are most concerned here with the first problem – that of discrimination. If there is a continuum from the normal to the idiot which passes through the feeble-minded, nonetheless for the purposes of administration it is necessary to establish firm boundaries for the feeble-minded as a class:

> From the normal child down to the lowest idiot, there are degrees of deficiency of mental power; and it is only a difference of degree which distinguishes the feeble-minded children referred to in our enquiry, on the one side from the backward children who are found in every ordinary school and, on the other side, from the children who are too deficient to receive proper benefit from any teaching which the School Authorities can give . . . Though the difference in mental powers is one of degree only, the difference of treatment

which is required is such as to make these children, for practical purposes, a distinct class.

(Education Department, 1898, Vol.1, para.13)

What means of discrimination are to be utilised, and which agents are competent to exercise them? The witnesses to the Defective and Epileptic Children Committee are principally doctors and the criteria which they advocate are constructed in terms of combinations of physical stigmata. And the Committee agrees with Warner, Beach, Shuttleworth and Harris that feeble-mindedness, like idiocy, is inscribed upon the body in malformations of the palate, tongue, lips, teeth and ears and in defective powers of motion and control. Yet the knowledge required for such a reading is becoming increasingly esoteric, signs are becoming deceptive to the untrained eye, significant only in their combinations and when supplemented by life histories and knowledge of the family, even sometimes by extracting information from the child itself through examination of its powers of reading or calculation. So specialised had the knowledge required for discrimination become that Beach estimated that there were not more than six doctors in England capable of diagnosing feeble-mindedness, (ibid., Vol.2, q.106), and even between the witnesses to the Committee no agreement on criteria could be found. As the Permanent Secretary pointed out, during the drafting of legislation, none of the Committee's witnesses had been able "to offer any verbal definition of that degree of want of intelligence which was to constitute a defective child" (quoted in Sutherland, 1977, p.139). For while the Committee wishes to designate the doctor as the agent competent to pronounce upon the feeble-minded, they are unable to reconcile this with the fact that the discovery of feeble-mindedness owes nothing to medicine but everything to education. It is education itself which has produced the feeble-minded child as a problem and necessitated the constitution of an apparatus for their detection and segregation, and it is education which will, therefore produce the only possible criterion for their identification – normal children will be those capable of benefiting from normal schools, feeble-minded those capable of benefiting from special schools, idiots those incapable of benefiting from school at all.

And gradually the pertinence of classification by visible signs begins to be called into doubt as the relation between them and the behaviours which constitute the educational problem becomes more obscure. For the teachers and educators, given the task of nominating children for examination by medical officers, unversed in the esoteric reading of stigmata, and concerned with the category of feeble-mindedness only as the unifying cause of a domain of behavioural effects, began to develop criteria in which this relation between cause and effect was all that was important; medical officers, faced with the problem of ratifying the teacher's decisions, began to do likewise (cf. Sutherland, op. cit., p.139). Feeble-mindedness was gradually being constituted as a direct link between psyche and behaviour, within which the body was no longer able to play the central role as the surface upon which interpretation was to be exercised. It is precisely at this point, in France, that Alfred

Binet will be called upon to advise upon modes of ascertainment from the point of view of psychology, and that the metric scale of intelligence will emerge to fill the administrative role which preceded it and established the parameters under which it was to operate. But before discussing Binet it is necessary to pursue a little further the formation of the peculiar conjuncture in which his test was to be inserted in England.

For with the discovery of the feeble-minded, this class gradually becomes the ideal object which regulates eugenicist discourse, in which they are constituted neither as a challenge to philanthropy, a burden external to pauperism or an obstacle to the smooth operation to education but precisely as the degenerate of the hereditary cycle of urban degeneration and national deterioration. This is how Alfred Tredgold, author of the standard text on mental deficiency first published in 1908 and going through eleven editions up until 1970, puts it in an article in the *Contemporary Review:*

> The whole tendency of recent enquiries is to show that the feeble-minded are not an isolated class, but they are merely one phase and manifestation of a deeply ingrained degeneracy. They are the kith and kin of the epileptic, the insane and mentally unstable, the criminal, the chronic pauper and the unemployable classes, and I am convinced that the great majority of the dependent classes existing today owe their lack of moral, mental and physical fibre to the fact that they are blood relations of the feeble-minded and are tainted with their degeneracy.
>
> (1910, p.721)

Tredgold writes here in the context of summarising the recommendations of the Royal Commission on the Care and Control of the Feeble-minded, set up in 1904 and finally reporting in 1908. It was in the tension formed at the conjunction of the four strategies towards the feeble-minded that the Commission's report is situated, yet owing a special debt to that eugenicist discourse which, as early as 1903 had, in the words of Ellen Pinsent, urged a "thorough and complete scheme of State intervention". For Pinsent, the evidence of the schools is re-utilised in a more general strategy of segregation, for having once discovered the numbers of the feeble-minded in their childhood, are they to be released unfettered into society at the end of compulsory schooling? Surely what are required are "permanent industrial colonies or permanent custodial homes to which children who were unfit to face life on their own responsibility could be transferred" after leaving school, and in this way "they would never be allowed the liberty which they can only misuse to their own degradation and to the degradation of the society in which they live" (1903, p.515). And if this entails a restriction on personal liberty, it is only doing sooner what would otherwise be done later when they ended up in the gaols or the workhouses.

It is indeed around this dimension of individual liberty versus state

intervention that the political debate over the feeble-minded was organised in the decade between the publication of Pinsent's scheme and the enactment of a modified version of the Commission's proposals in the Mental Deficiency Act of 1913. For against the eugenicist schema of surveillance and segregation was ranged another, anachronistic even then, for which the proper limits of State action excluded the forms of social regulation which administrative control of the feeble-minded implied: individual restriction was justifiable only when crimes have been committed, and action in this regard is to be limited to the juridical instance and subject to the right of due process (13). Whilst by 1913 such a strategy had suffered an almost total defeat, and the eugenicist cause had gained notable adherents, the events which followed do not illustrate so much the realisation of the eugenicist strategy as the stabilisation of the various schema in which the feeble-minded were caught up into complementary axes of a single theoretico-practical structure. It is here that the defective is constituted simultaneously as the object of a differential psychology and the objective of an administrative technology. And it is here that a science of mental measurement will become not just possible, but necessary. For, as we have seen, this structure is articulated not upon the drooling idiot of syphilitic teeth and degenerate ears, but upon the feeble-minded, whose danger is multiplied by the difficulty of identification by visible signs. The principles which the Commissioners outline as their guides in preparing the Report may be used to map the terrain upon which a psychology of measurement and differentiation will form itself over the next two decades:

> . . . that persons who cannot take part in the struggle of life owing to mental defect should be afforded by the State such special protection as may be suited to their needs . . .
>
> (Royal Commission on the Care and Control of the Feeble-minded, 1908, Vol.8., para.19)

Life is a struggle in which the feeble-minded sink to the bottom. Filling our prisons, clogging our schools, burdening our Poor Law institutions, occupying our homes for inebriates and, what is worse, accumulating in our slums out of contact with any institution of the State, these defectives are both a threat to and a burden on civilized existence; not only that, however, but the defective himself, deprived of the benefits of this civilization, lives a life of misery and degradation, unable to aid himself and exploited evilly by others. The opening of a contract between the State and the defective may thus be presented as of benefit to both parties; thus the discourse which develops upon the defective will so frequently stress the increase in the happiness of the defective himself which will result from offering him the benefits of segregation, and hence the mutually beneficial results of State intervention . . .

> . . . the protection of the mentally defective person . . . should be continued so long as it is necessary for his good. This we consider desirable, not only in his own interest but also in the interest of the

community. It follows that the State should have authority to segregate and detain mentally defective persons under proper conditions and limitations . . . This . . . is an extension to the whole class of the mentally defective of advantages now given to lunatics and idiots only . . .

(ibid., para.19)

Generously proposing to extend the benefits of permanent segregation to the mental defective for his own good, productively exploiting the contradictions in their own arguments, the Commission thus condenses into a single principle the whole debate concerning the hereditary transmission of defect and the necessity of preventing propagation, the benefits of training to the poor defective and to society, and the need for economy.

And feeble-mindedness has now penetrated to the very core of the individual, not brain lesions, though these might be symptomatic, nor stigmata, though they may be present, but impairment of the germ plasm is what is at stake. Even if the behaviours characteristic of feeble-mindedness do accumulate in the slums, this is no argument against the hereditary causation of the condition. As Tredgold puts it in his book:

My own enquiries have convinced me that in the great majority of these slum cases there is a pronounced morbid inheritance, and that their environment is not the cause, but the *result*, of that heredity. The neuropath is one who is at an economic disadvantage in the struggle for existence. He frequently finds it difficult to hold his place, and he is often possessed of careless, improvident, and intemperate propensities, which cause him to fritter away the money he does earn. He is on the down grade. No wonder, then, that he drifts to the slums.

(1914, p.38)

The relation between behaviours and germ cells poses the question of mental deficiency upon a terrain that we are already familiar with from Galton, the relationship between stock and its expression in which the crucial role of relay is played by mental abilities . . .

. . . that the mental condition of the persons, and neither their poverty nor their crime, is the real ground of their claim for help from the State . . .

(loc. cit., para.19)

The behaviours of the feeble-minded are merely index to the origin, and it is with regard to the origin, rather than its effects, that the State must direct its actions – at last mental deficiency and its administration is on the terrain that will become an individual psychology. Feeble-mindedness is a psychological state which is, however, knowable only on the basis of the social behaviours which it induces. As Tredgold puts it: "The condition is a psychological one, although the criterion is social" (1914, p.8). A psychological state is the legitimation for an

intervention whose object is the elimination of its consequences in behaviours, yet the existence of this state is only known through the introjection of the effects of which it is the supposed cause. It is in this familiar play of inward and outward, in the unification of a field of phenomena as the domain of effects of a singular cause that the individual which forms psychology's theoretical object will be formed: the locus of action of a unique set of forces, biological, psychic, social; the empirically synthesising unity which both bears and grounds these forces; the individual of psychology is, in short, the subject of the case. As the Report puts it, feeble-minded criminals, inebriates, paupers, children of school age, "are not so much prisoners, or inebriates, or paupers, or school children as persons who are mentally deficient" (loc. cit., para.191). It is in this play of behaviours and causes, of origins and expressions, that a science of mental measurement is formed.

For to deal with persons on the grounds of their mental defect requires a labour of definition of the different forms and degrees of mental defect, in order to allow for appropriate means of dealing with each. The Commission, in a spirit worthy of the Ideologues, divided persons of unsound mind into nine classes "subject to be dealt with", within which mental defectives were distributed among four – idiots, imbeciles and feeble-minded) classified according to a rising scale of social competence) and 'moral imbeciles' (persons who from an early age display some mental defect coupled with strong vicious or criminal propensities on which punishment has little or no deterrent effect). Like the Poor Law Minority Report which follows it, and which warmly endorses its proposals, classification and distribution are to provide the keys for the re-establishment of a regulated and orderly social regime, and a science of the social is to proceed through affixing unambiguous signs to previously floating groups of persons, thereby incorporating them within a perfectly readable social order. Despite the endless debates over the question of definitions which accompanied the passage of the 1913 Act, this schema, though limited to the four classes of defectives, was realised in a way which that of the Webbs was not to be, and its consequences for individual psychology were considerable . . .

> . . . if the mentally defective are to be properly considered and protected as such, it is necessary to ascertain who they are and where they are, and to bring them into relation with the local authority . . .
>
> (loc. cit., para.19)

Ascertainment thus has the defective both as its object, the theoretical focus constructed by a certain discourse on the means of detection of the feeble-minded, and as its objective, the real human individual who will be "brought into relation" with society by virtue of the operation of ascertainment, who will, in a very precise sense, be socialised. And simultaneously a class of agents will be constituted legally to act as the proxy of the law, but who are themselves not of the law, and not constrained to act according to its traditions. Law will constitute this group of professionals who may speak of the defective, and in con-

trolling this discourse on the defective will constitute him, exactly, as "subject to be dealt with". Law and administration constitute for a psychology of individuation that entity which is both its theoretical object, its technological target, and the horizon of its analysis, the place for which and from which it will be constituted to speak. Not simply a discursive operation is involved here, but a whole administrative apparatus unified under a central regulating body and stretching in a tentacular series of institutional forms, to the furthest reaches of the population – or at least this is the dream which it represents. The 1913 Mental Deficiency Act calls into being a complex and hierarchical structure of detection, ascertainment, supervision and distribution which has the defective individual as its object: a special mental deficiency committee in each local authority area must provide for the ascertainment of persons subject to be dealt with under the Act, must provide suitable institutions and maintain the defectives which it places therein, must provide for the conveyancing of defectives to and from these institutions, and must appoint officers to supervise the care of defectives in the community, the whole to be under the watchful eye of a central body to be known, appropriately enough, as the Board of Control.

And in legislation on education this structure of detection, ascertainment, supervision and distribution is redoubled, and a similar space is opened wherein will be constituted a psychological presence. Immediately a whole series of professional associations, professional literature and professional appointments begin to emerge. And the question of diagnosis, for psychology, is not only the task allotted to it administratively but also the means by which the knowledge which will constitute its status as a science will be gained. As Tredgold remarks, in a new chapter on Mental Tests and Case Taking which he introduces into the 1914 edition of his book, the result of this legislation is that:

> . . . the diagnosis of mental defect will come to occupy a very important place in medical practice . . . the legal position of the mentally defective now renders it extremely advisable that such examination should be systematic and carefully recorded . . . [although mental tests are still in their infancy] there can be no doubt that the science is one which has a great future before it in the elucidation of the problem of mental development and the practical work of education . . . mental tests . . . will be the means of carrying us on from that imperfect knowledge of the defective mind with which we have hitherto been compelled to be satisfied to a more precise and scientific knowledge of the subject.
>
> (1914, pp.359-361)

A psychology of mental measurement has become necessary.

Measurement and discrimination

. . . the object of the quantitative experiment is to measure . . . What we do is to carry out a long series of observations under the

> simplest and most general introspective conditions. Then we gather up the results of these observations in mathematical shorthand, and express them numerically by a single value. The questions asked of consciousness are, in the last analysis, two only: 'Present or absent?' and 'Same or different?'
>
> (Titchener, 1901-5, Vol.2, Part 1, p.v)

From Gustav Fechner's psychophysics to Edward Tichener's textbook of experimental psychology, psychological measurement operates upon the model of the experiment, it concerns a space bounded by the stimulus, the sensation and the reaction, its object is the formulation of the general laws of experience. To be adequate to the task of classification, measurement will have to leave the closed space of the body and the artificial territory of the laboratory, it will have to relinquish the quest for indexical measures in search of distributional rankings, it will concern itself not with the laws of the relation between body and soul but with the classification of the behaviours of the individual in respect of the social. Only then will individual psychology constitute itself and establish its foothold within the apparatus of administration. Let me briefly trace the paths involved here.

Gustav Fechner published the *Elemente der Psychophysik* in Leipzig in 1860. Psychophysics was formed in the intersection of two sorts of questions: firstly, what is the relationship between matter and mind, between body and soul; and secondly, if any science must proceed by establishing the laws which express quantitative relations between objects, is mind adequate to a scientific knowledge, can the soul be measured? Psychophysics operates within this space, and its laws and measurements thus concerned a field of problems which were, in a certain sense *internal* to the subject which it studied; it was to be "the exact theory of the functionally dependent relations of body and soul, or, more generally, of the material and the mental, of the physical and the physiological worlds" (Fechner, [1860] 1966, p.7). The quantitative relations which psychophysics sought to determine were thus those between the stimulus and the sensation, and the laws which concerned it were the general laws which governed this relation. This too was the terrain upon which Wundt's analysis of the elements of consciousness operated, and which his measurement concerned: break down experience into its constituent elements through introspection, relate these elements to the measured stimuli that evoke them under stated conditions, measure the quantitative relation between stimulus and experience, develop the general laws of these relations and of the combination of the elements into complex unities. Hence Wundt measures the senses, especially those of vision and hearing, he measures reaction time – the period spanning the stimulation of the sense, its presence in consciousness (perception), its identification, appropriation and synthesis by the subject (apperception) and the reaction (an act of will), he measures the smallest noticeable difference between stimuli of different magnitudes, and he measures associations between words. But all his measurement and analysis operates within this internal space

bounded by the stimulus, the experience and the reaction – hence the necessity for an absolute separation to be forged between the sphere of objects proper to experimental psychology and those proper to the social field, to *Volkpsychologie* (cf. Wundt, [1896] 1897).

It is not the case, of course, that the question of individual differences is unthinkable upon the terrain of a sensationalist epistemology, indeed Galton himself operated here:

> The trials I have as yet made on the sensitivity of different persons confirms the reasonable expectation that it would on the whole be highest among the intellectually ablest . . .
>
> The discriminative faculty of idiots is curiously low; they hardly distinguish between hot and cold and their sense of pain is so obtuse that some of the more idiotic seem hardly to know what it is.
>
> (1883, pp.28-29)

But for individual differences to become pertinent to a psychology of measurement will entail both a shift in its object and a shift in its forms of calculation – a shift first marked in the move from the experiment to the *test*. Cattel first introduces the term, rather unassumingly, still in the experimental context:

> Psychology cannot attain the certainty and exactness of the physical sciences, unless it rests on a foundation of experiment and measurement. A step in this direction could be made by applying a series of mental tests and measurements to a large number of individuals. The results would be of considerable scientific value in discovering the consistency of mental processes, their interdependence, and their variation under differing conditions.
>
> (1890, p.373)

Cattell proposes a series of tests, ranging from bodily measures (dynamometer pressure), through psychophysiological measures (least noticeable weight differences) to "purely mental measurement" (numbers of letters remembered on one hearing). But though these tests are themselves familiar, it is the object of their application that has been transformed. For they focus not upon the general characteristics of distinct mental functions across a range of individuals, with a view to establishing some general law, but upon the specific combinations of these distinct functions in particular individuals, with a view to establishing the parameters of individual difference. It is the individual who has become the object of measurement, and individual differences which have become the object of analysis.

Whilst the technique of the experiment focusses upon the individual only to the extent that he can supply data which will allow the formulation of general laws, in the practice of the test, measurements are made of individuals with a view to pronouncing a judgment upon them in comparison to some other individual or the general population of individuals. The displacement in the object of measurement marked by the emergence of the test allows two complementary alliances

to be formed – *firstly* with the technological operations associated with an administrative schema of the discrimination, classification and distribution of individuals with a view to ordering the population, and *secondly* with those statistical techniques in which the variations between individual measures and their distribution in a population of measures is the basis of their mathematical treatment. But before these two alliances will combine to reveal the full utility of the test, the demands of administration will already have prevailed over the hesitancies of science: Alfred Binet will 'discover' the mental scale.

In fact, the conditions of necessity for Binet's 'theoretical revolution' are, at one and the same time, the conditions of their possibility, for Binet may be regarded as the point of articulation of a psychological strategy concerning intelligence and its assessment and an administrative strategy concerning the defective and his detection and distribution. Binet from the outset regards the study of individual differences as central to the formation of a scientific psychology, and rapidly rejects the study of the elementary sensations as the means for this study, in favour of an attempt to measure and differentiate complex functions (cf. Binet and Henri, 1895). This measurement of complex functions must immediately take a different form from the measurement of elementary sensations, for these functions are recognised not in individual experience but in social behaviour. Psychological faculties can thus only be measured through a comparison between independent assessments of the relative abilities of individuals on the one hand, and various indices of mental functions on the other. These latter include both physical indices – cephelometric studies, graphology or any anthropometric measure which can provide a measurable range of differences between individuals – and mental indices – memory, mental images, imagination, comprehension, attention, aesthetic sentiment. But a decade after the programmatic text of 1895, Claparede, reporting on Binet's work, is forced to admit the failure of the attempts to develop a straightforward means of assessing individual differences in intellectual ability:

> The experiments made since [the 1895 programme] in the schools have shown that it is premature to look for tests permitting a diagnosis during a very limited time (one or two hours), and that, much to the contrary, it is necessary to study individual psychology without limiting the time – especially by studying outstanding personalities.
>
> (quoted in Wolf, 1973, p.140)

After ten years of investigation, Binet's project of establishing both a theory of intelligence and a means of assessing it and of discrimination between individuals on this basis has come to no conclusive results and no practical conclusions. Yet just thirteen months later the first metric scale of intelligence is published in *L'Année psychologique*. How is this transformation of failure into success to be understood? What sudden upsurge of creative genius is responsible for this remarkable leap forward in scientific techniques for psychological analysis? Perhaps

Beaunais answers our question, when he first announces the invention of the test in reading a paper by Binet and Henri at the Fifth International Congress of Psychology in Rome:

> The two authors of the present note have especially pre-occupied themselves with methods that could be used to make the distinction between normal and abnormal children . . . methods that will permit a clinician to separate the subjects of inferior intelligence into categories of idiots, imbeciles and feeble-minded by using objective, known characteristics verifiable by all; and second, that will permit commissions who decide on the admission of children into special schools to make an exact distribution . . .
>
> (quoted in ibid., p.141)

For the problem of recalcitrant children, ill-suited to the rigours and discipline of the school, was as much a consequence of the introduction of universal and compulsory education in France as in England. And Binet, in addition to his studies of intelligence, was implicated in a philanthropic strategy with regard to the education of the feeble-minded with which we are already familiar. As leader of the Society for the Psychological Study of the Child, Binet has been involved in the demand for the government to fulfil its legal responsibilities by extending the benefits of education to *all* children, including mental defectives. When the French equivalent of the Defective and Epileptic Children Committee was appointed – the Commission for the Abnormal appointed by the Ministry of Public Instruction in 1904 – to advise on objective means for selecting children for distribution into special schools, Binet was among its members. Binet directs himself now not to a theoretical but a practical task, not to devising a means of measuring intelligence, but to developing a means of classification, a means of diagnosis: "soon afterwards came a flash of understanding that allowed him to see that an effective test must be oriented to 'tasks of behaviour' rather than so-called faculties" (Wolf, op. cit., p.29). Not that Binet is isolated in this recognition – it is not the case of a unique concatenation of events which, synthesised by an investigator of creativity and brilliance, allowed a definitive break with some old paradigm. For it is precisely the strategic intersection at which Binet is located which is the condition of possibility for the shift to behaviours, a shift also effected, for example, by Damaye who, two years prior to Binet, in the context of a problem of pedagogy, finds the need for a diagnostic:

> The different faculties are thus no longer studied separately, in an experimental dissociation, we can even say dissection, but instead in their observable behaviours and according to popular and varied notions . . . The method appears to us to have a completely clinical character.
>
> (1903, p.47, quoted in Wolf, op. cit., p.175)

This is the crucial shift which Binet effects – from measurement of faculties, operating within a space internal to the subject and concerned with the relation between stimulus and sensation, to the examination of behaviours, in which measurement is concerned with the subject

only from the point of view of his socialisation. Behaviour is the link between the measurement of individuals and the administration of bodies, it is the common point upon which they are articulated (14). Yet, in this alliance, intelligence (as that which is measured) has initially a precarious status, a role limited only to that of utility. Binet recognises that the problem to which the test of intelligence is an answer is not that with which he has struggled for so long; what was measured as intelligence in this new device was not that which he had been attempting to measure in his detailed studies of his two daughters and his extensive observations and experiments upon children. Thus in *Les Enfants Anormeaux* ([1907] 1914) it is precisely the utility of the test as an *administrative* device (the text is subtitled "a guide for the admission of retarded children into special classes") which Binet and Simon wish to stress at the same time as emphasising its theoretical limitations: its criteria are not theoretical but educational, it is to serve only as a first means for the teacher to use in singling out children who may be mentally backward for further detailed investigation by a number of experts, the test itself is only a guide and never definitive. Yet *at the same time* as recognising its limits, as merely a tool of administration, precisely its promise, its ability to transform previously unmanageable attributes into assessable, calculable quantities, constantly beguiles them into wishing to establish its claims for something more. The first thing more is the extension from the classification of the pathological to the hierarchisation of the normal – precisely the hidden reference which intelligence provides for behaviour is the means whereby the test can be prolonged beyond its place of emergence. By 1908 the test has changed its title – from "new methods for the diagnosis of the intellectual level of the abnormal" to "the development of intelligence among children" – feeble-mindedness, hidden deep in the psyche of the child, beyond recognition by visible signs and physical stigmata, has provided the route by which psychology can penetrate to the truth of every child, and hence the possibility for the extension of the test of intelligence from the segregation of the abnormal into the regulation of the normal. Here, as elsewhere, it is in a question of abnormality that the normal is itself defined, fixed and regulated. And something of this, too, is in the desire that Binet and Simon speak when they present the test in its first crude form:

> When the work only sketched out here becomes definitive, it will permit the solution of many current questions, since it is no less a matter than the measurement of intelligence . . . permitting comparisons not only according to age, but also according to sex, social conditions, race, intellectual status . . . and normal and criminal anthropology.
>
> (1905, p.246, quoted in Wolf, op. cit., p.188)

In England, individual psychology will indeed form itself in a close relation with the forms of assessment which Binet proposes, yet this will involve the transformation of the test, of its structure, its status and its function, through its insertion within a strategic ensemble formed in the alliance between psychology and eugenics. Here the old

themes of eugenics – the hereditary transmission of stock, the question of the differential birth rate, the links between feeble-mindedness and social danger, will be taken up again and reworked in the context of the various apparatuses of administration; the two key sites here being the schools and the asylums. It is here, in this alliance, in these apparatuses, and initially at least in connection with the question of classification and distribution, that one will see the formation of a specifically psychological complex – a regulated relationship of agents, of discourses, of institutions and of practices installed in a crucial place between the law and the population which it constitutes as the object of government. In the case of psychology and measurement, this status of savoir will be reached first through an opposition to Binet's transformation, then through a critique of it, finally through the formation of an alliance with it which will allow its strategic reformulation. And it is in this strategic reformulation that mental measurement as we know it today is stabilised. To trace this process, we must first return to Cattell, and his proposal for mental tests.

When Cattell's paper on the differentiation of individuals by means of mental tests was published in *Mind* in 1899 it was followed by some remarks by Francis Galton. Galton expressed great interest in Cattell's procedures, but considered that they would achieve their goal of differentiating individuals only if they were compared with "an independent estimate of the man's powers", for example "mobile, eager, energetic, well-shaped . . . " (Galton, 1890, pp.380-381). It is with reference to these remarks that Spearman directs his famous 1904 paper on general intelligence. All previous attempts at psychological measurement have, in this respect, been failures: they have been unable to show any relationship between the measures which they have obtained and the attribute of the individual in his ordinary life. Indeed they have even failed to demonstrate any relationship between the different measures which they have used. And Binet's attempts to measure complex functions escape neither of these objections (cf. Sharp, 1899; Wissler, 1901). Yet, Spearman resists the implication that these results are fatal to the whole project of individual psychology. In a manner to be repeated throughout the history of psychology, the history of its failure to realise the desire which lies behind it, Spearman's answer is not less, but *more* – what is needed is not to abandon the project but to get more data, better methods, more precisely quantified results, more sophisticated methods of analysis. Spearman obtains measures of his sample of Harrovian schoolchildren with regard to their discriminatory abilities on weight, sound and vision and employs a development of the statistical methods of Beauvais, Galton and Pearson to correlate his results with rankings of the children in order of intelligence. The latter he obtains from the order which they are placed in by their school results, by their teacher, by a fellow schoolchild, and (an incomplete list, alas) by the Rector's wife. The findings are startling: "the common and essential element in the Intelligence wholly coincides with the common and essential element in the sensory functions" (1904, p.269)

Now two things have happened here which have situated this discourse on intelligence entirely within the eugenicist strategy. Firstly, measurement has become a question of differentiating between individuals through sequential comparisons, ranking them upon a linear series according to some characteristic regarded as having a continuous distribution whose pattern follows the normal curve. Intelligence thus becomes a unitary characteristic which can be treated according to the statistics of large populations, in which individual scores receive their pertinence from the perspective of the population itself and their relation to its norms. And secondly, intelligence has become the measure of the outward and visible effects (behaviours) of an internal and biological cause (sensory abilities). It is thus quite consistent that Burt's (1909) attempt to extend and develop Spearman's work in his investigation of Oxford schoolchildren from schools of different quality should have been undertaken at the instigation of William McDougall, who then can celebrate its results a few years later in a paper entitled 'Psychology in the service of eugenics':

> . . . we must regard [Spearman's and Burt's finding] as one of the greatest importance for eugenics; for we have discovered a measurable factor which is involved in, and is an important factor or condition of proficiency in, many mental operations; a factor which is possessed in very different degrees by different individuals.
>
> (1914, pp.300-302)

Spearman will also draw these conclusions from his own research, explicitly allying his conception of general intelligence with Galton's earlier notion of that vital energy which underlies and makes possible labour and all the robust virtues (cf. Spearman, 1915, p.313). For it is, of course, from the demonstration of a biological basis for mental characteristics that the eugenicist strategy must draw its force. Burt returns to this theme when he argues, in relation to general intelligence:

> . . . we may eventually seek the psycho-physical basis, underlying this capacity, in a particular characteristic of general neural constitution; the accentuation of such a neural characteristic would then produce the type of mind known as intelligent, while its biological inheritance would form the condition of the transmissibility of the mental trait.
>
> (1909, p.169)

Thus the postulation of a unitary function of intelligence, biologically based, eminently inheritable, the basis of all the virtues of the individual, is merely a reworking of themes which have been familiar since the publication of *Hereditary Genius;* it is not surprising then that we are explicitly returned by Burt to that significant inflection which Booth suffered at the hands of Galton in 1901:

> . . . we seem to have proved marked inheritability in the case of a mental character of the highest "civic worth".
> Parental intelligence, therefore, may be inherited, individual intelligence measured, and general intelligence analysed; and they

can be analysed, measured and inherited to a degree which few psychologists have legitimately ventured to maintain.

(ibid., p.176)

Whilst for Binet the test of intelligence is formed at the price of abandoning, for a moment, theoretical concerns for administrative convenience, only to find that, in the passage through the scale, the theoretical concerns have themselves been transformed, for the English psychologists the test was initially formulated within a well tried theoretical schema. And whilst Binet will only construct his scale at the cost of abandoning, very briefly, the normal for the pathological, for the English eugenicists the field of extension of the testing of intelligence, and the level of its social pertinence, is always that of the normal itself, or rather the variation and distribution of individual measures in the population as a whole. Yet precisely because of the fact that Binet's scale is directly oriented to the question of classification, needs no specialised equipment, concerns itself not with the imponderables of the discrimination of sounds and weights but with observable behaviours according to easily understood criteria and produces, in a single number, all that is required for the purposes of administrative knowledge of the psyche, it is not Burt and the eugenicists, but Binet and Simon who will provide the psychology of measurement with its first taste of power, and this power will be not in the hands of psychologists but in the hands of doctors.

We can trace this gradual penetration of the test into the space opened for it in the apparatus of administration in the successive reports of the Chief Medical Officer of the Board of Education. By 1909 the question of the diagnosis of the feeble-minded, as required by law, is already causing problems to School Medical Officers, and the C.M.O. publishes a schedule for the examination of children including not only tests of motor ability, sensory responses, emotional balance and will-power, but also 'tests of intelligence' involving the descriptions of pictures, counting ability, handwriting and so forth. And the officers are being urged on with assurances of the importance of their task of ascertainment in order to enable the feeble-minded to contribute to their own support, save them from harsh treatment on the streets, prevent them from becoming drunkards, criminals and prostitutes and from giving birth to children who must certainly grow up to be a burden on the community. And in his report for 1910, he explicitly allies the organisation of the apparatus for feeble-minded children with a schema with which we are familiar, when he remarks that "the Day Special School is an indispensible agency both as an 'observational centre' and a 'sorting house' " (p.220), a place where children may be classified and distributed to the appropriate agency for disposition, and concludes with a plea for:

(a) more accurate and useful *classification*, including the differentiation of the educable from the ineducable and the appropriate grouping of the children according to the nature of the education from which they may be expected to profit;

(b) a more practical, manual and industrial *training* . . .
(c) more effective and vigilant *after care* . . . ; and
(d) power to establish and assist residential institutions for providing *custodial care* for all ineducable feeble-minded children . . . .

(Board of Education, 1911, p.220)

And it is within this familiar strategy of classification, distribution, socialisation or segregation that, in 1911, the "psychological and educational tests associated with the name of Binet" are introduced for the first time into the recommended examination (Board of Education, 1912, p.196), in a position which they will continue to occupy as the passage of the Mental Deficiency Bill in 1913 stabilises the administrative apparatus in a form in which it will persist for many years.

This is the situation upon which Burt comments in his 1914 article in the *Eugenics Review* – the success of the Binet tests and their possession in the hands of the doctors, is such that he cannot fail to be disturbed. He is full of reservations, both about Binet's attempt to measure intelligence in terms of mental years ("like measuring stature with an elastic rod, warped in two or three places along its length, and telescoped in upon itself at the upper end" (op. cit., p.50)), and about Stern's development of Binet's work in which a 'mental age' is computed and related to chronological age in an 'intelligence quotient'. Yet these theoretical reservations cannot deny the recognition that, in orienting the test to behaviours, in demonstrating its utility and generalizability, in condensing all the information necessary for discrimination into one measure, quantitative, allowing for specification, generalisation and comparison, the Binet test is to allow individual psychology its point of entry into social administration, and it is round the labour of discrimination with regard to intelligence that psychology is first to constitute itself as an effective instance. It is in 1913 that the first educational psychologist is appointed to London County Council, Burt himself, who is to busy himself for many years with precisely the project of forging the alliance between the need for assessment in terms of some simple measure, and the need to bring to bear upon this measure all the techniques of population statistics, to ensure its conformation with the normal curve of distribution, to ensure that it measured "innate, general cognitive efficiency", to ensure that it had practical utility not simply in the ascertainment of the abnormal but in the identification of variations in the normal. Yet nonetheless it is around the pathological that the discourses and practices of psychology will gradually crystallise and regularise themselves, in relation to exactly that group of figures to whom Burt refers in 1921:

> No appeal is more often addressed to the psychologist than the demand for a mental footrule. Teachers, inspectors, school medical officers, care committee visitors, the officers of the juvenile criminal courts, all have long felt the need for some such instrument . . .
>
> (1921, p.1)

An intriguing list of figures who demand the test, those who operate in that heterogenous network of non-juridical practices and apparatuses which install themselves between the law and the institutions which it designates – the schools, the hospitals and clinics, the asylums, the courts, the prisons and, of course, the family itself. And the role of these figures is principally that of dealing with those subjects who, for a whole variety of reasons, fail to be socialised; the socialisation of these recalcitrants becomes the object of a special kind of labour which is, precisely, that of social work. And it is upon these agents, constituted in a particular strategy towards the social, that is articulated the relationship between the operations of administration and the forms of knowledge with which they are systematically and symbiotically linked.

It is here that a recognisable psychological complex will begin to be sedimented, and in this process, as I have tried to indicate in this paper, the question of the mental measurement of individuals will be doubly implicated. First in the relationship established between abilities and their inheritance, population and variation and certain forms of statistical calculation, which made possible the intelligence test as we know it today. And second in the eugenic strategy and the part which it played in the formation of a particular practice of social administration and in the constitution of a certain form of mental deficiency as both the object and the target of a definite set of operations with regard to individuals so designated. And it was, in part, in the productive relationship formed in this conjunction of discourses and practices that psychology in England took shape, together with its peculiar object, the calculable, orderable, regulatable, distributable human individual, bounded by the limits of its body, possessor of attributes, locus of forces, author of actions, target of socialisation. Perhaps there is an echo of truth in the rhetorical flourish of a remark made by Philip Ballard when, in 1920, he celebrates the importance of the mental test:

> . . . Binet's crowning glory, is not that he got together a medley of heterogeneous tests for the detection of the feeble-minded, but that he invented a scale. In this he resembles Saul, the Son of Kish, who set out to look for asses and found a kingdom.
>
> (1920, p.13)

Conclusion

It would be possible to trace, from this point, the extension and reformation of the complex of psychological discourses, practices, institutions and agents which colonise this kingdom, and the vicissitudes of the question of the feeble-minded and of the technology of the test; however that would be to prolong the present paper beyond its objective. For that objective has not simply been the reconstruction of a certain episode in the history of psychology, though something of this has been a part of it, but also to make, obliquely, some more general points. Let me try to sum up.

What I have tried to do is to show how the formation of what I have termed a psychological complex can be understood in such a way as to enable us to pose to it, and the operations which constitute it, questions as to its form and functioning which it is difficult to compose within some other analyses. These questions concern the very constitution of what, today, we conceive of as the domain of the social, the relationships between the forms of knowledge entailed in the human sciences and this domain, the implications of these relations for the configurations of power which traverse it, and hence for a strategy of their transformation.

Thus I have argued that one can trace, in England, in the first decades of this century, the formation, through a series of uneven tactical compromises, of a strategy with regard to the regulation of the population which centres upon the question of socialisation, and which depends upon the possibility of identifying recalcitrant individuals and distributing them according to their characteristics. In the case of the mentally defective, I have suggested that it is within this strategy that the feeble-minded individual is constructed as a problem, as the target of a practice of distribution that necessitates the formation of an apparatus of specialised institutions and procedures which will support such a distribution. It is as a consequence of the functioning of these apparatuses that a class of agents begins to be constituted upon whom the responsibility and the competences necessary for effecting this distribution is devolved. And the effects of this upon psychology are not only dependent upon certain prior theoretical conditions, but also are to produce a transformation in the theoretical field and object of psychology itself. In the case of measurement, for instance, I have described the series of transformations which were involved in the transition from a conception of psychological measurement modelled upon the experiment and aspiring to the formulation of the general laws of the relation between body and soul, to one organised around the test and concerned, rather, to elaborate the laws of the relation between the individual and society.

In the sense in which I have described it then, the psychological complex is to be regarded as having its conditions of formation in a complex series of struggles and alliances between distinct discourses organised into various strategic ensembles. Neither the fact nor the form of its existence can be reduced to the effect of any necessity imposed either by a teleology of knowledge or by the development of the mode of production. And the relations of power within which psychological discourse operates can not be seen as external to the operations of that discourse, as coming from outside to use or abuse it or as providing a false, alienated or reified picture of its object, for both the object and the operations of psychological discourse are constructed internal to a domain of knowledge and power, that is, within what I have termed strategies. The notion of strategy is to be understood here as designating a set of operations that are non-subjective, and yet implicate subjects within them; they are intentional, but they are

certainly not willed; they are non-conscious, but they are not operations of any unconscious; they are not consistent, but neither are their inconsistencies undetermined. Strategies, rather, must be seen as regulated fields of effects formed at the intersection of heterogenous discourses and practices, which are governed by no single principle, and subject to no general governance, but nonetheless achieve the outcome of coherence (15).

And if the psychological discourse which forms within this strategy has itself some coherence, this is not, as we have seen, a coherence which may be traced to the operation of a set of causal propositions which are logically consistent, rationally justified and subject either to empirical verification or falsification or to disproof by reasoned argumentation. For we have seen that psychological discourse establishes its effect of truth through a series of elisions, of ambiguities, of metaphors and of conflations which are not merely marginal, an inevitable quota of errors which may be isolated and excised, but are functioning necessities which are vital to the very operation of the discourse itself. It cannot be, here, a question of a domain of falsity which is to be confronted with its truth, but rather, as I have suggested, the identification and description of the regime of truth which psychology constitutes. For even though it does not answer to the rules of logic or rationality, psychology is far from a space of free play of language; on the contrary the operations by which it sustains itself are regulated and may be isolated, examined and described.

To carry out such a task is not, I would argue, merely an academic exercise in historiography, or even a desire to pay due attention to the details of the texts of psychology's history which are so violently treated when forced through the grids of ideology or of the history of ideas. On the contrary, this is an operation which, it seems to me, is only possible when we recognise that what is involved here is not an attempt to reconstruct our past but to understand our present, an attempt in which the recourse to the past is more a gathering of clues than a reconstruction of events (16). For in the case of this paper my motive concerns precisely the field of the social, so often marginalised as the domain of satisfaction of human needs, or as the stage upon which the logic of capital or the scenario of class struggle is merely represented or played out. It seems to me that we are beginning to recognise that the social is both the site and the stake for a socialist politics, but we are also in danger of taking its present forms and constitution as the horizon of that politics. It has, I think, been the virtue of the recent work by Michel Foucault, by Jaques Donzelot, by Giovanna Procacci and Pasquale Pasquino and others that it has allowed us to put into question the very nature of the social, and to force us to attempt to see how it is constructed, by what operations of power and knowledge, through what strategies, under what conditions of intercorrelation and dependency between the various discourses and practices which make it up, and with what consequences. In doing so, it has allowed us to understand more clearly what is involved in any

attempts at the reform of this domain. Not to imply that reform is impossible because of the operation of some underlying cause which predetermines it to failure, but to reveal the extent to which reforms must pose as central not simply a certain set of ends – the elimination of poverty, the provision of a free and universal health service on a non-commodity basis or whatever – but also the means within which those ends are to be met and the relations and distribution of power within them. There is perhaps the possibility opening up that we might be able to re-pose such central political slogans as 'popular democratic control' in such a way as to ensure that the social reforms which are entailed do, indeed, amount to a *reformation of the social* and hence avoid simply repeating the worn out debate between reform and revolution which has racked socialist discourse since its inception.

It seems to me that the domain of the social today is, in a very real sense, constituted in and through the apparatuses of administration, of welfare and insurance, of education and health, which, over the last hundred years or so, have progressively installed themselves between law and the population. Whilst the apparatuses of the juridical instance operate according to criteria which are, at least in principle, specifiable in law, this is not the case in the social sphere. For the practices here, though they may be constituted by law, operate according to criteria which, from the point of view of law, are indeterminate: their rules and procedures are dependent upon the forms of explanation and proof which have been elaborated within the social sciences. And these social sciences themselves are far from disinterested in the question of power, as I have tried, in a small part, to demonstrate in this paper. And if we are to consider this domain of the social as a terrain of intervention, and develop a strategy with regard to it, it is relevant to pay some attention to the role played by psychology, for I think we will find that, as the complex of discourses and practices which has the human individual as its object, this role is not unimportant.

Notes

1. This is a revised and extended version of a paper first given to the Psychology Specialist Course at the tenth Communist University of London, July 1978. I would like to thank Diana Adlam, Graham Burchell and Colin Gordon for helping me to re-write it; in many cases I have simply incorporated their suggestions into the text. It will also be clear that I have drawn heavily on both the procedures and the substantive results of the work of Michel Foucault and those who have worked with him. In both of these cases repeated references and acknowledgments would still be inadequate, so this general note must suffice.
   I should also point out that, despite its length, the argument in many places in this paper is condensed in the extreme; many of the points will be elaborated in my forthcoming study of the history of psychology in England. In particular it should be noted that although the questions of mental deficiency and mental measurement are given a discursive priority in this paper this has no necessary causal implications. For the purposes of the present exposition I have marginalised a number of other important issues, in particular the relations of psychology with therapeutic and pedagogic practices.

2. See, for example, the accounts in Flugel (1951), Murphy and Kovach (1972) and Hearnshaw (1964).
3. Examples of such critical strategies may be found in Henderson (1976), Ingleby (1974), Karrier (1976), Levidow (1978), S. Rose (1976) and Simon (1978). I should point out that I wish to deny neither the political intentions which underpinned some of these critiques, nor the fact that some of their effects have been valuable – for the political effectiveness of a position is not reducible to its epistemological basis. My intention is rather to demonstrate, in this paper, the range of questions of political importance which cannot be coherently posed within such positions.
   It is also interesting to note that the field of mental measurement in particular, and of 'sociobiology' in general, is rapidly becoming a happy hunting ground for social historians. When these analyses progress beyond the anecdotal, they seem to favour a form of sociological reduction which treats discourses as determined by the 'social status' or 'professional allegiance' of the subjects who expound them, thus opening up an interminable field of investigation into biographies, influences and interests. These problems seem to vitiate the recent contributions of Mackenzie, Norton and Searle to the conference on 'The Roots of Sociobiology' which was held whilst the final verions of the present paper was being typed up (see Mackenzie, 1978; Norton, 1978; Searle, 1978).
4. For Foucault see in particular *La volonte de savoir* (1976), for Bachelard see *La formation de l'esprit scientifique* (1970), for Canguilhem see, for example, the Introduction to *Ideologie et rationalité* (1977). For English sources where these questions are discussed see Lecourt (1975), Gaukroger (1976) and some of the comments in Donzelot (1979). These points are discussed in more detail in my forthcoming piece referred to in note 1.
5. The argument here has been heavily condensed and is necessarily cryptic. Jacob (1974) discusses some of these questions helpfully.
6. For a discussion of theories of rural immigration and urban degeneration see Jones (1971). For a classic exposition see Marshall (1890, pp.253-4).
   The question of 'alien immigration' which was central to the American debates, is raised in England largely in this context and in relation to the problem of sweating. The argument centred around Jewish immigration and was posed differently to the American texts – it was precisely the superiority of the Jewish intellect, its cynical and calculating nature, the willingness of the Jew to work long hours for little pay and hence displace or drag down native workers that provided the justification for the limiting of rights of entry in the Aliens Act of 1905. See Hobson (1892, p.59 ff.), White (1892), Russell (1900), Royal Commission on Alien Immigration (1903) and the discussions in Gartner (1960), Gainer (1972) and C. Jones (1977).
7. For reference to the debates over population in political and economic discourse see Schumpeter (1954, pp.250-276). For a source in English which introduces Foucault's work in this area, see Morris (1977). For a discussion of the links between social imperialism and social reform see Semmel, 1960. It should be noted that the link between the fortunes of the nation, competition, efficiency and fitness were not made only by the apologists of imperialism, they also regulated the arguments of many who were concerned to criticise imperialist policy. Thus, for example, Hobson's famous (1902) critique of the economic justification for imperialism (in favour of a theory of underconsumption), the political rationale for imperialism (it was in the interests of only a class of economic parasites, monopolists and militarists) and the moral basis of imperialism (in favour of a "rational humanism"), nonetheless operates on the same terrain when it argues for the substitution of "rational" for "natural" selection amongst nations in a federation of civilized states (cf. ibid., Part II, Ch. II).
8. For texts elaborating upon this theme see Warren (1901), White (1901), Pearson (1901), Maurice (1903), Shee (1903), Horsfall (1904). See also the discussions in Searle (1971, Ch. 3) and Gilbert (1973, pp.81-101).
9. The strategic re-utilisation of old evidence in a new argument is a familiar operation in eugenic discourse. For example, paralleling Galton's reworking

of Booth in Eastbrook's reworking of Dugdale's study of the Jukes. One of the first of the 'family histories' which were to be an important element in eugenicist research, Robert Dugdale's (1877) study of the Jukes family traced the descendants of five 'mentally defective' sisters and discovered, at the end of several generations, that of the 540 individuals there were 128 prostitutes, 142 habitual paupers on outdoor relief, 64 institutional inmates and 76 habitual criminals. Dugdale, whilst considering this to have demonstrated the fact that these conditions may be inherited, deployed his data within an argument for environmental reform, and suggested that, given an improvement in social conditions, the social evils manifested in the Jukes family would disappear within two generations. When re-examined in 1915 by Arthur Easterbrook, of the American Eugenics Office, the same evidence was deployed in an argument for the genetic determination of degeneracy and the need for segregation and sterilisation (Easterbrook, 1916).

10. I cannot discuss in this paper the conditions for, and the consequences of, this 'discovery', and its place in a genealogy of pedagogy. See my forthcoming study, cited in note 1, and also a forthcoming paper by Graham Burchell, which deals with these questions in detail. For conceptions of the idiot as ineducable see Pinel ([1801] 1806) and Esquirol (1818, pp.508-523). For the role of wild children in this episode see Lane (1977). For Seguin see Seguin ([1846] 1866 and 1870).

    For the legal history with regard to idiocy and mental deficiency see Matthews (1954) and Hilliard and Kirman (1957).

11. The account which follows deals with education only to the extent that it is pertinent to the constitution of the problem of the feeble-minded.
12. See Burchell, op. cit., note 10.
13. For an extensively referenced account of the eugenicist debate as a 'moral panic' see Searle (1976), who provides an extensive bibliography of eugenicist literature. Searle also gives details of the positions taken up by various politicians and political forces (pp.106-111) as also does K. Jones (1972, Ch.8).
14. See the papers collected and translated in Binet and Simon (1916).
15. For some useful comments on the concept of 'strategy' see the review of Jacques Donzelot's *La police des familles* in this issue of this Journal.
16. See the introductory remarks by Colin Gordon (1978) to two articles by Pasquale Pasquino and Giovanna Procacci, and Donzelot (1979).

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