The Essential Mary Midgley

Edited by
David Midgley

Routledge
Taylor & Francis Group

the essential MARY MIDGLEY

edited by **david midgley**

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2005
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
270 Madison Ave, New York, NY 10016

Routledge is an imprint of the Taylor & Francis Group

Typeset in Celeste by RefineCatch Limited, Bungay, Suffolk
Printed and bound in Great Britain by MPG Books Ltd, Bodmin

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

Library of Congress Cataloging in Publication Data
Midgley, Mary, 1919–
[Selections. 2005]
The essential Mary Midgley / edited by David Midgley.
p. cm.
Includes bibliographical references and index.
1. Philosophy, British—20th century. I. Midgley, David, 1953– II. Title.
B1647.M471M53 2005
192—dc22 2004022490

ISBN 0–415–34641–X (hbk)
ISBN 0–415–34642–8 (pbk)

CONTENTS

FOREWORD

JAMES LOVELOCK

Soon, in historical terms, humanity will face a great and severe trial. An acceleration of the global change now under way will sweep away the comfortable environment to which we are adapted. Such events are a normal part of geological history; the last one was the Earth's move from the long period of glaciation to the present warmish interglacial. What is unusual and interesting about the coming event is that we are the cause of it and nothing as severe has happened for tens of millions of years.

Mary Midgley and I were present at a recent gathering in Devonshire of climatologists and other Earth scientists and engineers concerned with the consequences of this global change. The scientists delivered the grim message that some time during the coming century the Earth System, Gaia, will pass a threshold beyond which it is committed to irreversible and mostly adverse change. Once we pass this threshold, set by the level of carbon dioxide in the air of somewhere between 400 and 500 parts per million, nothing the nations of the world do will alter the outcome. We are in a sense like passengers on a small pleasure boat sailing quietly down the St Lawrence River towards the Niagara Falls, not knowing that the engines are about to fail.

You may wonder how such a scientifically literate society as ours could be in such a fix and why our scientists have not warned us sooner of these huge dangers ahead. Mary Midgley's writings explain with pellucid clarity how and why in the last two centuries, science and philosophy have been blind to the truth about the Earth and have failed

to let us see that our planet is effectively a living entity and not merely a ball of rock with the air and oceans at its surface and life as mere passengers.

We are an argumentative tribal animal and we settle our differences by adversarial contest or war. Science and religion that should have shared their sense of wonder about our magnificent and beautiful planet have instead nursed their erroneous dogmas and fought for supremacy over the way we think. In the twentieth century, science won its pyrrhic victory and became the acknowledged source of wisdom about life, the universe and everything, including the Earth. How ironic that instead of regarding science as the supreme source of wisdom many, especially environmentalists, have turned away and now listen to astrologers, alternative scientists and indeed anything other than science.

They are not to be blamed for their rejection; the knowledge science offers is like the discourses of medieval monks, so coded as to be incomprehensible even to most scientists themselves. How many physicists are fluent in virology and how many evolutionary biologists know anything of inorganic chemistry? The last two centuries have seen the slow development of a cultural dementia characterized by a fragmentation of thought.

Mary Midgley traces the flaw that led to this cultural psychosis to an obsession with rationalism. In Newton's and even in Darwin's time, a scientist could wonder and be comfortable with religious faith and the fact that his ideas came through intuition. The distinguished French mathematician Henri Poincaré said: 'It is by logic we prove, it is by intuition we invent', but his countryman Descartes thought otherwise and insisted on the superiority of reason. In collegial moments, scientists will measure a savant's eminence by the length of time he holds up progress in his field. By this measure, Descartes was unusually eminent and Mary's writings reveal the extent to which Cartesian thinking led scientists to become almost exclusively reductionist and has led the unwise among them to claim that soon they will be able to explain everything, presumably by pure reason. The last two centuries have seen a triumph of reductionist science, which includes the discovery of the nucleic acid code and the partial but impressive understanding of the universe and the atom. All of it came from reductionist thinking. But the price paid for the successes of Cartesian thought has been the spurning of intuition, of holistic and systems thinking and, most recently, the failure for too long to see the Earth as a living entity able to self-regulate its climate and composition in a way favourable for life.

If you find it hard to believe that science is really as blind and disabled as this, consider how much scientists are beguiled by the truth, purity and beauty of equations. It is too easy for them to believe that the reduction of a hard-worked project to an elegant equation is the ultimate goal of science. The equation that relates the volume (V) of a sphere to its radius (r) is $V = 4/3\pi r^3$; this is what most of us were taught yet how many of us ever use it? In the natural world things do not come like tennis balls as spheres, they come as pebbles on the beach and no simple elegant equation can ever describe them.

I find it strange that the word 'irrational' should be a pejorative when much of quantum physics is wholly inexplicable and so is the phenomenon of emergence that is so important a part of life and living systems. To understand our planet we have to see it as Mary and a small band of scientists, theologians and philosophers do, as something alive, something of great antiquity, almost a third as old as the universe.

Although many scientists are beginning to see the Earth as a self-regulating system and incorporate the idea in their models, the failure of science in the twentieth century to understand the Earth led people to believe that nothing is more important than the good of humankind. Scientists, such as Einstein, and the philosopher Bertrand Russell, and indeed intellectuals of all persuasion, shared this view. I share Mary Midgley's unusual wish to question the overarching value of humanism and to doubt that human rights are all that matters. We are part of the Earth, and as we are now discovering, our actions can affect the planet itself and its feedbacks ensure that we suffer or enjoy the consequences.

She shows us how wrong it is of us to regard ourselves as some kind of supreme intelligence and the apotheosis of evolution. But it would be equally wrong for us to ignore our awesome responsibility as the Earth's first socially intelligent species. We are not the stewards of the Earth, not its owners or even its tenants; we are an integral part of it. We can be proud to have been the first to hold a looking glass for Gaia and let her see how beautiful she is, but we need to be deeply concerned about our power to put right the damage we have inadvertently done.

Therefore, I see this as a vitally important book and one that politicians everywhere should read, because only by seeing the Earth as alive can we properly confront the menacing threat of global change. We have but a brief time left.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to the following sources for permission to reproduce material in this book.

Midgley, M., *Animals and Why They Matter*, Penguin Books Ltd and The University of Georgia Press 1983.
Midgley, M., *Wisdom, Information and Wonder*, Routledge 1989.
Midgley, M., *Science as Salvation*, Routledge 1992.
Midgley, M., *Utopias, Dolphins and Computers*, Routledge 1996.
Midgley, M., *Science and Poetry*, Routledge 2001.
Midgley, M., *Wickedness*, Routledge 2001.
Midgley, M., *Beast and Man*, Routledge 2002.
Midgley, M., *Evolution as a Religion*, Routledge 2002.
Midgley, M., *Heart and Mind*, Routledge 2003.
Midgley, M., *The Myths We Live By*, Routledge 2003.

INTRODUCTION

Mary Midgley is a philosopher of unusually wide-ranging interests – from the nature of human wickedness to the fallacies attached to the Anthropic Principle in cosmology. The present volume is an attempt to bring together a selection of her writings that show the continuity and connectedness of these diverse themes, so as to enable the reader to gain a grasp of her thought as a whole. In this Introduction I shall try to trace the connecting thread that leads from the initial impetus which motivated her writing through to her most recent work.

To attempt an assessment of the significance of Mary Midgley's work as a whole is at the same time to inquire into the meaning and importance of philosophy within contemporary culture and society, for one of the central features of her work throughout her career has been an abiding commitment to bringing philosophical thinking to bear directly on issues of practical concern. This commitment goes beyond an involvement in applied philosophy, in the sense of using philosophical methods to argue directly for the adoption of specific policies. It is rather a concern, not with the pursuit of abstract truth for its own sake, but with the kind of understanding which informs the health and well-being of a culture or a civilization. And this might be a definition of philosophy, one that would perhaps be endorsed by some of its greatest practitioners (Socrates, Plato, Aristotle and Kant spring to mind).

At the start of this project, the publishers sent me as a model the parallel volume on David Bohm. On reflection, the connection thus made seemed to me highly appropriate; for despite working in apparently unrelated fields, both these thinkers are distinguished by their very important contributions to a crucial intellectual task of our time. This

task is the restoration of the unity in our view of ourselves, and of our relationship to the natural world of which we are a part, which was dealt such a damaging blow by the rise of the conceptual outlook of scientific materialism. This world-view, with its constituent agendas of reductionism, dualism, atomism and mechanism, has dominated European thought for the last four centuries. It has now lost the rationale it had in the triumphant success of classical physics, since the new physics is quite inconsistent with the ontology and epistemology of materialism. But it continues, with immensely damaging effect, to dominate the contemporary intellectual landscape.

These damaging effects reach far beyond the confines of university departments; they distort our thinking on the crucial problems and challenges now facing humanity. Scientists like David Bohm, James Lovelock and Ilya Prigogine are now tracing the outlines of a new kind of science, able to provide insights into the complexities and subtleties of an essentially organic world which escape the relatively blunt instruments forged by Descartes, Galileo and Newton. But the seventeenth-century conception of Nature as a machine, able to be brought under control and 'fixed' by the skills of the engineer, still continues to occupy centre stage. The fantasy that bio-engineering, micro-electronics and nuclear fusion will provide solutions to the problems of ecological destruction, social disintegration and mass poverty is founded on a defective mode of thinking. The analysis of what exactly is wrong with such thinking, how it arises, and what alternative visions and concepts can help to correct it, is philosophy at its most socially relevant.

The sustained, wide-ranging and sensitive critique of the ideology of scientific materialism advanced over the past thirty years by Mary Midgley is perhaps the best known aspect of her work. But there is a great deal more to her thought than the exposure of the flaws in this world-view. Her starting point and constant locus of concern is the damaging effect which this, and other one-dimensional systems of ideas, have on our moral thinking. Trained as a moral philosopher at Oxford in the 1940s, a time when the narrow and hyper-specialized tendency of Anglo-Saxon analytic philosophy was at its height, she has consistently challenged philosophers, as well as physicists, biologists and psychologists, to recognize the richness and diversity of human life and the natural world, to which no monolithic reductive theoretical viewpoint can do justice.

This methodological pluralism continues and develops one of the central insights which permeates the thought of an apparently very different thinker, whose name would not normally be closely associated

with Midgley's, namely the later Wittgenstein. This is his concern with the persistent tendency in our thought to distort reality by using the conceptual tools appropriate to one domain to deal with a different one. 'A picture held us captive', says Wittgenstein. The effort to escape this bondage to compellingly simple pictures (metaphors, paradigms) requires the constant use of the philosophical imagination, and of a faculty of critical judgement independent of any preconceived theoretical position.

This is a very difficult endeavour to sustain, and one in which few of Wittgenstein's direct disciples have done anything like justice to the spirit of his inquiry. Moreover it is notoriously difficult to see how the invaluable, but negative, corrective power of such an approach can be completed by a positive doctrine broad and systematic enough to take the place of the theories under criticism. Accordingly, despite many excellent small-scale studies which showed the virtues of clarity, precision and freedom from theoretical 'baggage' which his influence had encouraged, English-speaking philosophy after Wittgenstein suffered generally from a failure to tackle large questions, and to engage constructively with other disciplines and with matters of concern to the general public, by whom it was largely dismissed as pedantic and irrelevant.

This was especially true in moral philosophy, where the preoccupation with the intellectual virtues of clarity and precision, at the expense of others such as moral seriousness and relevance to real life, was particularly damaging. In this value-system, ethics lacked the prestige of logic, epistemology and semantics; and much work done in the field, as well as being too abstract and restricted in its terms of reference to be of much value to the non-specialist, was also of very mediocre quality.

There were, however, honourable exceptions, among them a remarkable generation of women philosophers who had the signal advantage of an Oxford philosophical training largely free of the ego-battles of their male counterparts, then away at the Front. They included Elizabeth Anscombe, Philippa Foot, Iris Murdoch and Mary Midgley, and their work was distinguished both by their deep moral seriousness and by a willingness to engage with real-world problems, going beyond the narrow limits which linguistic philosophy had set for itself. This work remained true to the spirit of Wittgenstein's quest to free philosophy from the paralysing effect of 'systems'. But until the publication, in 1978, of Midgley's *Beast and Man*, it did not show signs of giving rise to an overall intellectual structure that could take on the synthesizing and guiding role for which the discarded systems of Descartes, Kant, Hegel and the rest had been thought necessary.

THE ROOTS OF HUMAN NATURE: A NEW STARTING-POINT FOR MORAL PHILOSOPHY

Beast and Man: The Roots of Human Nature marked out (and developed with great clarity and thoroughness) a new kind of approach to moral philosophy, neither restricting itself to fine-tuning our ways of discussing piecemeal and local problems nor offering a new, simplistic reductive theory treating all particular moral questions as instances of one or two universal central principles. For Midgley, there is indeed a 'central' question in moral philosophy, a 'key' to its further development – not in some final absolute sense, but as the primary location of the complex of problems which had blocked progress in the subject for the better part of a century – namely the cluster of confusions surrounding the concept of Human Nature.

It is impossible for moral philosophy to get started without a conception of Human Nature, whether this is acknowledged or not. Whatever confusions and inadequacies are embodied in the model of human nature on which a moral theory is based will be reflected in error and incoherence in its substantive conclusions. In fact, this is true, though less obviously so, for philosophy generally. This crucial issue had been addressed by Wittgenstein in his late work, especially *Philosophical Investigations* (1953). He drew attention to the importance for philosophy of giving attention to very familiar, everyday facts about the kind of beings we are – our 'forms of life', our familiar habits of building, trading, 'asking, thanking, cursing, greeting and praying'. Observation of the context within which our concepts, and the language we use to express them, arise can help to dissolve the illusory ideal pictures of ourselves produced by metaphysical theories. If we are to understand what 'knowing', 'perceiving', consciousness', 'certainty' or 'meaning' are, we need to observe them, as it were, in their natural habitat – in everyday human activity.

Thus Wittgenstein, who in his early work had carried the quest for a watertight, ultimately simple logical system to its extreme limit, ended by reversing the order of priority and giving primacy to the observations of everyday life as the 'ground floor' of our knowledge, on which the grand designs of science, mathematics and formal logic must be seen as resting (in contrast to Descartes, who had the building the other way up). In a characteristically telling metaphor, he describes the conflict between this idealising tendency of thought and the requirements of 'real life' language:

> The more narrowly we examine actual language, the sharper becomes the conflict between it and our requirement. (For the crystalline purity of logic was, of course, not the *result of investigation*; it was a requirement.) The conflict becomes intolerable; the requirement is now in danger of becoming empty. – We have got on to slippery ice where there is no friction and so in a certain sense the conditions are ideal, but also, just because of that, we are unable to walk. We want to walk: so we need *friction*. Back to the rough ground!
>
> (*Philosophical Investigations*, 107)

This reassertion of the primacy of everyday knowledge and experience, of the 'natural history' of human beings as the essential basis of the understanding of mental life and mental concepts, is an immensely significant move, which has far-reaching implications over the whole field of human thought. It is one which Midgley explores with great thoroughness throughout her work. In three related ways, however, she greatly extends the scope of Wittgenstein's insight. In the first place, Wittgenstein's concern was with logic, epistemology and the philosophy of mind, traditionally seen as the central areas of philosophy (largely because of the preoccupation with deductive reasoning as the paramount feature of our mental life). Midgley applies the 'natural history' approach to ethics, where its implications are still more far-reaching, and in the process suggests a drastic re-evaluation of the significance of ethics relative to the rest of philosophy.

Second, where Wittgenstein drew his material from shrewd analysis of a few quite simple observations of everyday human activity, Midgley draws on a vast body of systematic and careful observations, scientific in the old sense of precise and methodical but not in the reductive theoretical sense. These are the findings of ethology, the systematic study of animal behaviour represented by the work of Konrad Lorenz, Niko Tinbergen, Jane Goodall and others. Finally, by relating human nature and behaviour to its origins in the nature and behaviour of other animal species in this way, she goes significantly beyond Wittgenstein's important move of considering the human activities of interest to philosophers (perceiving, thinking, deciding, judging, etc.) in their wider context of human social life. In order to arrive at a genuinely balanced view of the latter, we need to locate it in its still more inclusive setting of the natural world as a whole. The task of helping us to gain a better awareness of our 'place in the world' was classically seen as central to the project of philosophy. In much twentieth-century philosophy, however, it

was abandoned in favour of increasingly abstract and specialized theorizing, contributing to grave confusion and error within the wider culture.

This, then, was the project of *Beast and Man* – first, to bring the concept of Human Nature back to the centre of the philosophical stage, where it belongs. Second, to show how the attempt to conceive it as radically separate from its origins in our evolutionary history has led to systematic error and confusion, with severely damaging consequences for our culture. And third, to map out an approach to philosophical questions, in ethics especially, which is consistent with this understanding of our nature, as a very particular kind of social mammal (as opposed to a Cartesian pure rational intellect in a machine body).

It is important to distinguish sharply between this approach to relating ethics and biology and that advocated by what is called 'sociobiology', and more recent variants such as 'evolutionary psychology'. Though these approaches do have the merit of acknowledging our continuity with other species, their strongly reductionist bias distorts their analysis of the common motivational structure of humans and other animals. This makes it essentially impossible for them to do justice to the higher intellectual and ethical capacities of humans (some of which are shared by other species). Despite the claim that these approaches offer a way to bring ethics into the domain of empirical science, they are in fact highly unempirical, taking the fundamental selfishness of all human and animal motivation as an axiomatic principle. This fatally flawed assumption, held to follow from the principle of evolution by natural selection, is the essential premise of Social Darwinism – a view which, Midgley is at pains to stress, is quite contrary to Darwin's actual views and was principally the brainchild of Herbert Spencer, himself not a biologist but a social philosopher of a somewhat mystical bent.

The assumption of selfishness as the basis of motivation is not ultimately redeemed by recasting the theory in terms of 'kin selection' or 'gene selection' (following Richard Dawkins, E. O. Wilson and others), for three main reasons. First, as Midgley makes clear, the use of the everyday vocabulary of human motives – selfishness, spite and so on – in this context is necessarily misleading. Although the sociobiologist may claim that these terms are being used in a technical sense which does not imply that the individuals actually have the motives that the everyday concepts refer to, the ordinary associations of the terms cannot be effectively severed from them in this way. And in fact, both Wilson's and Dawkins's writings, like those of many of their followers, are replete with instances of sliding back from the technical to the everyday use of these terms, so that they end up with what is in effect a traditional

egoistic account of human motivation, which has no actual justification in the official version of their theories.

Second, the reasoning on which the axiomatic assumption of selfishness as the evolutionary basis of motivation is founded is itself unsound. It rests on a rejection of the possibility of altruism, since, supposedly, altruistic behaviour traits would necessarily diminish the survival chances of individuals possessing them (or, in the variant accounts, their genes or kin). This presupposes that such traits as 'a disposition to sacrifice one's life if another is in danger' are separate items, which could be genetically switched on or off in isolation from the rest of life, rather than consequences of a much more general overall integrated structure of motivation which makes possible the whole interwoven fabric of social existence.

The ubiquitous atomising tendency is at work here, in the form of the assumption that – because we can *refer* to people's motives separately – these motives are therefore *in fact* separate and independent items that, like Lego pieces, can be added and taken away without affecting the rest. The whole project of genetic or evolutionary psychology, and with it that of genetically engineering people for desired personality traits, rests on this philosophical howler, criticized in detail in *Beast and Man*, chapter 6, 'Altruism and Egoism'.[1] Indeed, if it were true that our psychology is constituted by such Lego-like 'units of behaviour', each linked to a distinct gene, it would be impossible for altruistic behaviour to evolve, since social species themselves could never have come into existence.

The third reason, therefore, for rejecting the thesis that the principle of natural selection implies that all motivation must be essentially selfish is that it is inconsistent with the facts, as Kropotkin brilliantly demonstrated in his classic work, *Mutual Aid: A Factor of Evolution.* In response to T.H. Huxley's version of Social Darwinism, Kropotkin argued convincingly that co-operation is in fact a more important factor in evolution than competition. This work, together with its even greater (and still more unjustly neglected) successor, *Ethics: Origin and Development*, is the true intellectual precursor of Mary Midgley's efforts to integrate an account of moral life into a genuinely scientific account of human nature. Both writers, incidentally, make the point, with extensive quotations from Darwin himself, that the Social Darwinist thesis and its contemporary descendants are foreign to the spirit and substance of Darwin's own work, both in their reductionistic reliance on *a priori* arguments rather than empirical observation, and in their attempt to bolster an egoistic view of ethics by appeal to the principle of natural selection.

Wickedness: A Philosophical Essay continued the project of mapping out an account of human nature consistent with our evolutionary roots with an exploration of the darker side of our nature. It was written as a counterpoise to *Beast and Man*, which had striven to overcome the culturally entrenched tendency to equate animal motivation with the rejected aspects of human nature, thereby distorting our picture of both. Accordingly, the earlier book emphasized the common origin of the most valued aspects of human mental life, previously assumed to be the exclusive possession of humans. In *Wickedness* the 'leftover business' of examining human destructiveness and evil was thoroughly explored.

The first task here was to make clear that there was a subject to be investigated. The contention that there is indeed such a thing as human wickedness comes into collision with several cherished assumptions of liberal theory. Reacting against the appalling oppression focussed around the notion of sin in traditional Christian society, there was a progressive tendency in Enlightenment and modern thought to 'deconstruct' the notions of wickedness, guilt and blame. Harmful acts came increasingly to be seen as the result of either genetic predispositions or social conditioning. Unfortunately, however, both alternatives share the drawbacks of depriving us of our concepts of freedom and responsibility, and thus fail to provide any basis for moral choice or moral development.

What is needed instead, Midgley argues, is to avoid the demonization that normally accompanies the recognition of moral defects in others – a process of alienation and denial that entirely blocks any understanding of the stigmatized individual or group, and is itself one of the most potent sources of social evil. Instead we must seek to understand the inner processes of the wicked person, without taking from them the moral responsibility for their acts. The ensuing journey through the darker recesses of the human psyche is, to me, one of the most engrossing aspects of her work; its conclusion, in brief, is that wickedness is essentially a negative phenomenon, a failure to access some of the positive elements in our nature. Ironically, the power of the evil person often derives from what are normally morally positive qualities – the diligence and conscientiousness of an Eichmann, the courage and intelligence of Satan in Milton's *Paradise Lost*, the religious zeal of the protagonist in James Hogg's *Confessions of a Justified Sinner*. It is their lack of the complementary balancing motives of empathy, humility or self-awareness which turns these positive attributes into fuel for their destructive projects.

Having examined the 'Beast Within', Midgley completed this phase

of her work with a more practically oriented look at the 'Beast Without' in *Animals and Why They Matter*. This and another book published the same year, *Women's Choices* (co-authored with Judith Hughes), were her only book-length contributions to applied philosophy strictly so called.[2] The account of the relation between human and animal nature offered in *Beast and Man* clearly has dramatic implications for the range of ethical issues surrounding our dealings with other species. The neglect of these issues is one obvious effect of the assumption of a radical opposition between human and animal nature. If animals (following Plato) are the embodiment of all that is base and unworthy in our mental life, or (following Descartes) if they are actually not conscious at all, it seems to follow that it is all right to inflict on them any treatment which it suits us to inflict. The issues of animal experimentation, factory farming and other forms of institutionalized abuse of animals have of course been a major focus of moral concern with the general public for a long time. At the time the book appeared, however, it was still a grossly neglected topic in academic philosophy, and Midgley's pioneering work played a significant part in its acquiring a much more prominent place in the arena of moral philosophy. The book was also a model example of applied philosophy, combining intellectual rigour and balance with great popular clarity and force of conviction.

PHILOSOPHIZING OUT IN THE WORLD: BEYOND THE ANALYTIC STRAIT-JACKET

The genesis of the highly original approach to moral philosophy developed in Mary Midgley's early writings was a reaction to the confining intellectual climate then surrounding the subject. She began teaching again in 1965, after a break of about fifteen years during which, among other things, she had raised three children and become absorbed in the study of animal behaviour. These experiences led to a profound dissatisfaction with the image of the human being which lay in the background of the Oxford analytic tradition that still prevailed in British philosophy. Though this tradition tended to see itself as having been emancipated from the errors of the past, as a result of the revolution in philosophical method brought about by Frege and Wittgenstein, in this respect it was still heavily under the influence of the thinking of the great philosophers of the Enlightenment – Descartes, Spinoza, Locke, Hume, Kant and the rest.

Common to all these thinkers was a view of Reason, conceived essentially as the capacity for logical deduction, as the defining characteristic

of the human mental constitution, as opposed to that of animals, who possessed perception and emotion, but not Reason. (It is not irrelevant to observe that these male thinkers often held not dissimilar views about the contrast between men and women – see the extract from *Science and Salvation* in Part Three, entitled 'The Remarkable Masculine Birth of Time'.) The division between Reason and Feeling has been the source of a number of problems in moral philosophy throughout its history, and is the subject of Midgley's second book, *Heart and Mind.* Traditionally, these faculties have been conceived as categorically different and mutually exclusive. Hume's classic dictum, 'Reason is the slave of the passions', identifies reason as the faculty of pure logical deduction, completely universal and objectively certain but without relation to 'merely contingent' matters concerning the particular constitution and needs of human beings, and emotion, by contrast, as an essentially arbitrary, blind impulse, devoid of cognitive content, a 'brute fact' which arises in us and which reason can perhaps guide and correct but which is fundamentally alien to it.

In contrast, Midgley stresses the inextricable unity of these and other facets of our nature; what it is to be rational (a 'rational animal' in the Aristotelian formula) is *essentially* related to contingent truths about the structure of human motivation. Because of the kind of creatures we are, there is a wide range of important motives which are natural to us, and which frequently conflict. Rationality consists in consciously and skilfully balancing these conflicting motives so as to do justice to the full range of our emotional, physical and intellectual needs, to the demands of family, society and self, and so on. The artificial division in this process between pure logical reasoning and 'mindless' feeling which Hume's formula implies cannot be made out in practice; in a characteristic trenchant metaphor, Midgley tells us that this is like 'trying to unscrew the inside from the outside of a teapot' (*Heart and Mind*, p. 102).

Hence the principle of the 'Naturalistic Fallacy' – that it is impossible to argue validly from facts to values – which Moore, following Hume, made the cornerstone of his ethical theory, is a red herring. To the extent that the mainstream tradition of moral philosophy in Britain and the United States took Moore's principle as its starting point, there was therefore grave need of a fresh start. In *Heart and Mind* and two subsequent works, *Can't we Make Moral Judgements?* and *Wisdom, Information and Wonder*, Midgley further develops the critique of this tradition commenced in *Beast and Man.* Again, therefore, the theme is unity; the model of binary logic – the analytical method – continually causes philosophers to try to treat separately things which can only be

understood as aspects of an integral whole (Heart and Mind, Reason and Feeling, Fact and Value, Mind and Body).

This separation and fragmentation is the essence of the intellectual approach known as reductionism, epitomized in the principles set out in Descartes' *Discourse on Method*; the way to understand anything is to break it down into its constituent parts, identify their individual properties, and then deduce from these the properties of the whole. The source of this reductionist bias in philosophy is of course the pervasive tendency to regard science, and in particular mathematical physics, as the model for all rational thought.

THE MYTHS OF SCIENCE: DREAMS OF OMNICOMPETENCE

The image of philosophy as the critique of the ideas which inform and guide society as a whole inevitably comes into sharp conflict with the widely held view that it is, or should be, science which performs this function. Since the Renaissance, when the position of religion as the pre-eminent source of this wisdom was first seriously challenged, the candidacy of science as successor to its vacant throne has gathered increasing momentum. A typical view, quoted by Midgley in *The Myths We Live By* (p. 14), is that of Nehru:

> It is science *alone* that can solve the problems of hunger and poverty, of insanitation and illiteracy, of superstition and deadening custom and tradition, of vast resources running to waste, of a rich country inhabited by starving people . . . The future belongs to science and to those who make friends with science.

Here science is, quite clearly, being identified with rationality generally. In this sense not only civil engineering and medicine, but also social policy and administration, law, architecture and in fact the whole sphere of organized practical life are implicitly included in 'science'. The failure to distinguish clearly between this somewhat metaphorical use of the word 'science' and the narrow and specialized one referring to the domain of controlled experiments and mathematical theories is one factor contributing to the emergence of 'scientism' – the view of science as 'omnicompetent', able to provide answers to all questions and solve all problems. Science becomes a kind of deity, able to bestow on us a miraculous salvation in which not only the large-scale evils referred to by Nehru, but all forms of ignorance and suffering, even including mortality, are overcome through the application of science and technology.

One of the principal virtues of science stressed by those who advocate it in the role of primary fount of wisdom for society is objectivity. From this point of view the principal failing of religion is that, not being in the required sense objective, the truth of its claims cannot be definitively decided by empirical tests. If religion seeks to lay down judgements about factual matters – and this has often occurred – such criticism is entirely warranted. But it oversteps the mark, and becomes dangerous, when accompanied by the failure to understand that there are other important kinds of thinking than purely factual ones. As Dobzhansky says (quoted in *Evolution as a Religion*, p. 15): 'Science and religion deal with different aspects of existence. If one dares to overschematize for the sake of clarity, one may say that these are the aspect of fact and the aspect of meaning.' If religion is at fault when it attempts to pronounce on matters of fact, science is equally so when it lays claim to authority in the domain of meaning. This is not to say that scientists are not entitled to express opinions on such matters, or even that they should not do so in the context of their scientific writings. But it should be acknowledged that in doing so they are doing theology or philosophy, not science, and that the relevant professional standards apply. The target of Midgley's criticism in two of her best-known books, *Evolution as a Religion* and *Science as Salvation*, is a recent genre of scientific, or quasi-scientific, writings in which scientists who themselves have little or no philosophical or theological training make sweeping pronouncements on philosophical matters, implicitly or explicitly appealing to the authority of science for their claims. A not unrepresentative example is the following passage from an acclaimed and widely discussed book by the cosmologists Barrow and Tipler (quoted in *Science as Salvation*, p. 22):

> [We] are cosmologists, not philosophers. This has one very important consequence which the average reader should bear in mind. Whereas many philosophers and theologians appear to possess an emotional attachment to their ideas which requires them to believe them, scientists tend to regard their ideas differently. They are interested in formulating many logically consistent possibilities, leaving any judgement regarding their truth to observation.

As Midgley points out, the grandiose speculations which form the body of this work could not conceivably be tested by observation; furthermore, though the authors seem unaware of it, both the motivation and

much of the content of their ideas relate to judgements of value and metaphysical assumptions which are not empirical matters at all. No attempt has apparently been made to relate their treatment of these questions to previous work by specialists in the relevant fields – a procedure which they would unquestionably regard as disbarring from serious consideration a comparable attempt by a philosopher to speculate at large on questions of theoretical physics.

It is important that these are not just *ad hominem* criticisms of particular authors, but rather are endemic and in fact necessary failings in the entire enterprise of constructing a supposedly scientific alternative to religion. If the concepts and methods of science are assumed to be the right ones to provide answers to the questions about the ultimate meaning and purpose of life which have traditionally been regarded as the province of religion and philosophy, and if the methods already in use in these disciplines are different ones, then it follows that the deliberations of specialists in these areas are of no significance, and the conscientious scientist should ignore them.

The source of the trouble here seems to lie in the ever-increasing tendency towards specialization in education, particularly scientific education, over the past century and a half or so. On the basis that the exponential growth of knowledge requires a progressively finer division of intellectual labour, educational policy has increasingly been based on the assumption that students of science cannot (and therefore need not!) be expected to spend time acquiring a degree of familiarity with non-scientific disciplines. The effects of this policy are very far-reaching, and are explored at length in *Wisdom, Information and Wonder*. The one which is relevant here is the tendency for such an education to make it difficult or impossible for scientists to grasp the possibility of forms of understanding different from the one in which they have been trained, leading them to assume that those engaged in other disciplines lack the capacity for 'real', rigorous (i.e. mathematical) thought. This phenomenon is well illustrated by the preceding quotation from Barrow and Tipler, and reflected in numerous quotations from influential authors (especially E.O. Wilson, Richard Dawkins and Peter Atkins) throughout Mary Midgley's writings on these topics.

REASON AND IMAGINATION: UNDERSTANDING OUR VISIONS OF REALITY

From a philosophical standpoint, what is occurring is an example of the widespread and important problem of communication between

alternative world-views. Someone who has been educated more or less exclusively in terms of a particular world-view will not normally be fully aware that this is the case, since this world-view will be transparent to them. The world *as seen through this particular lens* will appear to them to be just *the world as it objectively is in itself*. It is only by acquiring the experience of seeing the world through different lenses that this distinction comes to be understood.

History, literature, anthropology, physiology – and indeed horticulture and watercolour painting – all have their own categories and concepts, their own characteristic ways of perceiving and describing things, which enable those engaged in these studies to grasp their subject-matter in the most appropriate way. There is no one 'master science' to which all the others can be reduced, thereby rendering them unnecessary. This anti-reductionistic point is forcefully made by Midgley (in the context of discussing the problem of relating mind and body) with another striking metaphor:

> We are not looking for the relation between two places on the same map. We are trying to understand the relation between two maps of different kinds, which is a different kind of enterprise. At the beginning of an atlas, we usually find a number of maps of the world. Mine gives, for instance, world physiography (structure and seismology), world climatology (mean annual precipitation, climatic fronts and atmospheric pressure), world vegetation, world political, world energy, world food, world air routes and a good many more. If we want to understand how this bewildering range of maps work, we do not need to pick on one of them as 'fundamental'. We do not need to find a single atomic structure belonging to that one map and reduce all the other patterns to it . . . We have to see the different maps as answering different kinds of questions, questions which arise from different angles in different contexts. But all these questions are still about a single world, a world so large that it can be rightly described in all these different ways, and many more. It is that background – not a common atomic structure – which makes it possible to hold all the maps together. The plurality that results is still perfectly rational. It does not drop us into anarchy or chaos.

The fundamentally important idea that there are *different ways of seeing the world*, which yet do not necessarily conflict with each other, is another central theme in Midgley's thought. It is related to another very

important philosophical topic, namely the role of the imagination in knowledge. Imagination here does not refer to the capacity to represent to oneself things and situations which do not exist, but to the ability to form a connected vision of a range of phenomena, of the framework of relationships between them and the principles that operate in this particular domain. The target of Midgley's critique here, present as an important element in her work from the beginning but worked out in detail in *Science and Poetry* and further elaborated in *The Myths We Live By*, is another Cartesian division – that between Imagination and Reason. The reductionist tradition, following Descartes, has tended to downplay the importance of imagination, equating it with the realm of fantasy and entertainment, and to view knowledge as exclusively the product of the senses together with reason in the form of logical deduction.

Imagination, however, plays an absolutely central part in, for example, Kant's account of knowledge; it carries out the work of *synthesis* by which the individual elements of sense-perception are welded into a coherent, unified representation of an outer world. Without this unifying activity, Kant convincingly argues, we could not make any sense at all of the mass of sensations impinging on our sense organs. Hume's conception of the self as an unorganized 'bundle of perceptions', all separate from and unrelated to each other, fails to provide a sufficient basis, not only for scientific knowledge but for any kind of coherent experience at all. This eighteenth-century empiricist account of knowledge has, however, remained influential within the philosophy of science, and still more so among scientists who are not trained philosophers, despite the widely accepted verdict that Kant's critique of Hume's atomistic model of the mind was wholly successful.

The tendency of recent philosophers to over-emphasize the analytic side of their discipline, while often overlooking the aspect of synthesis, is part of the general aspiration towards the intellectual values of science, as opposed to those of literature, which in earlier periods were regarded as equally its concern. Though she is known as a philosopher of science, Mary Midgley's background as a classical scholar, and her deep literary and historical sensibilities, have enabled her to bring another perspective to the subject. Her work serves as a reminder to the modern reader that the literary-historical mode of understanding is just as essential to philosophy as the logical-scientific one.

The underlying reason for this is that these two radically different ways of apprehending the world are of equal and universal importance in human life generally. They belong to the deepest layer of our nature as conscious creatures. Understanding someone's character, through

seeing the patterns of motivation and emotional response in his or her life-story, is as vital to human survival as understanding how to make fire or grow crops, and one cannot be substituted for the other. The linear, convergent, deductive style of thinking which is central to science is perfectly adapted for finding out what makes a clock tick, but almost useless for finding out what makes a person tick. Philosophy needs both kinds, and *Science and Poetry* is Midgley's most eloquent and sustained attempt to show how they relate to one another, and how they can be combined to produce philosophy that is at once sensitive and rigorous, able to take in a vista as well as analyse the structure of a leaf.

Imagination, then, is not to be seen as an optional extra in our mental equipment, providing spare-time entertainment for the mind in the form of poetry, paintings and religious visions, but as an essential element in all our knowledge of the world, not excepting the most rigorous scientific theories. Every such theory, in fact every attempt to make sense of any aspect of the world around us, necessarily proceeds from an overall vision of the phenomena in question. Thus Newton's investigation of optics was guided by the imaginative vision of light as a stream of minute particles; Huygens' by that of waves undulating in a fluid medium. Neither of these visions revealed the actual, fundamental nature of light as it is in itself, but both were capable of being used as tools for understanding many aspects of the phenomena, and of being refined and reworked to provide new tools yielding deeper insights and more precise predictions.

On a larger scale, all of our experience and thought is coloured by a more general set of concepts, images, metaphors and habits of thinking which go together to make up what Midgley calls a *world-picture* or a *myth*. It is important to stress here that the word 'myth', for Midgley, in no way implies that the ideas in question are false or lacking justification. Her use of these terms is comparable to Thomas Kuhn's notion of a paradigm, in the sense of an exemplifying image or model of a set of phenomena. But the use of the word 'myth' designedly draws attention to the central role of imagination in this process, and to the wider role that myths play in the rest of human life; our concept of 'how the world fundamentally is' (*Science as Salvation*, p. 7) has, historically, derived much more from poetry and religious teaching than from science, and the world-vision of classical science itself was drawn, to a far greater extent than most scientists today probably realize, from such poetic and mystical visions.

Perhaps the most influential and powerful vision, or myth, of this kind is that of atomism, the idea that all of the immensely and seemingly

irreducibly diverse range of things in Nature are in fact just different arrangements of essentially identical, indivisible and inert particles. This view was developed by Greek and Roman philosophers at a time when there was no real question of empirical evidence for it as a scientific theory, and was worked out in comprehensive detail in Lucretius' epic poem *De Rerum Natura* (Of the Nature of Things), which Midgley takes as the starting point of her exposition in *Science and Poetry*. Lucretius, then, was not primarily engaged in logical reasoning or in experimental research, but in using a literary medium to convey an imaginative vision of the nature of reality. He consciously promoted this vision as an alternative to other visions of reality associated with religious creeds, or with ethical philosophies other than his own favoured Epicurean system. So successful, however, was this world-view, when it later became the guiding vision for the enterprise of classical Newtonian physics, that many of its followers ceased to be aware that it is but one way of conceiving reality, and took it for the ultimate truth about how the world inherently is.

But the atomistic view of the world, for all its triumphant success in illuminating the workings of physical systems and the unprecedented material benefits arising from the application of this knowledge, has now ceased to serve us. It has become instead a straitjacket constricting and distorting our attempts to understand other aspects of the reality with which we need to deal. The catastrophic deficiency of the atomist world-view is its inability to encompass the essential characteristics of living entities. It views matter as essentially 'dead', passive and inert, and the universe as consisting of nothing but matter and empty space. Locked into such a concept of reality, it is not surprising that physical scientists come out with such bizarre statements as 'Inanimate things are innately simple. That is one more step along the road to the view that animate things, being innately inanimate, are innately simple too' (Peter Atkins, quoted in *Science as Salvation*, p. 48). This is a very clear case of confusing the conceptual scheme we use to investigate reality with the reality itself. If we insist on holding fast to the atomist myth, we are approaching the job of understanding living systems with the wrong toolkit, and it will land us in deep trouble. What alternative vision, or visions, can we turn to that can serve to illuminate the realm of living things in the way that is needed?

GAIAN THINKING: PUTTING IT ALL TOGETHER

Atomism has been of inestimable value in helping us to understand those aspects of the world that can be understood without reference to the special, unique attributes of living things. For these purposes the conception of the world as comprised of dead matter was not a hindrance. But the impact of the technologies, ways of thinking and ways of life that have grown out of this materialist conception of the world has had a cataclysmic destructive effect on the world of living things, on the planetary ecosystem. The secular culture of the modern West is in fact unusual in viewing the cosmos as basically inanimate. Is it time to reconsider the possibility that the tendency of other cultures to regard the world we live in as itself alive is more than a primitive superstition and may contain a profoundly important truth?

James Lovelock's Gaia hypothesis, formulated in the 1970s as a response to questions arising out of space research on the possibility of life on other planets, answered these questions with a profound observation; in order to continue in existence, life on Earth has to intervene actively to maintain the physical conditions which are necessary for its preservation. It does so on a colossal scale, transforming incredible quantities of energy and matter in ways that keep the environmental parameters within limits which allow the processes of life to function. As Lovelock points out, this regulating tendency is precisely the same in principle as that by which the cells and organs of individual organisms work to maintain the parameters of their internal environment within a delimited range; very much like a cell or an organism, the biosphere as a whole is involved in self-sustaining metabolic activity. In a sense, one may say that it is impossible for life to exist on a planet that is not itself alive.

The Gaia concept was initially anathematized by official science, though eagerly embraced by ecological activists and those interested in spiritual alternatives to traditional religion. To the scientists, it appeared to violate fundamental assumptions of rationality; it was rejected as imputing purpose to the biosphere, as positing a mystical, transcendent entity – Gaia – who somehow interferes with the mechanical processes of causation to bring about her own ends. But of course such a view is no more required in the case of Gaia than it is in the case of individual organisms and cells, whose self-maintaining attributes are undeniable and are held to be ultimately explicable without reference to the purposes of a transcendent being. The processes to which Lovelock draws attention are explained (in broad principle) by perfectly unmysterious relationships of dynamic equilibrium between the physical and chemical

processes involved and the population dynamics of the organisms which contribute to these processes. The real problem with Gaia, one suspects, is that these scientists sensed that it threatened to provide an alternative image of 'how the world fundamentally is', an inclusive, holistic, pluralistic and essentially organic vision in which complex interactions, connections and relationships are the prime focus of attention, and the analytic, atomistic, reductionistic way of thinking fades into the background.

As well as colliding with the metaphysical assumptions which underlie reductionistic science, Gaia Theory presents a fundamental challenge to the ethical, social, political and economic ways of thinking that have grown out of this world-view. Here the central concept which is the target of Midgley's critique is the doctrine of individualism, another core theme in her work from the outset. This is the atomistic mode of thinking projected onto the social sphere, and was, together with the doctrine of the autonomy of reason, at the centre of the Enlightenment reaction against the oppressive social order instituted by mediaeval Christianity.

The liberating effect of the change arising from placing individual life at the centre of our system of values can scarcely be overstated. Nevertheless, like all ideologies, the ideology of individual freedom has a reverse side, which when carried too far becomes as pernicious as the oppression which it was a reaction against. The alienation and fragmentation which are at the root of so many grave problems in our society today are to a great extent a consequence of an over-emphasis on individual satisfactions at the expense of communal ones. Individualism distorts social relations because it implies a view of human nature as fundamentally selfish; individualistic views of society and atomistic views of the natural world are of a piece, and the combination of the two has led to a catastrophic neglect of the dimension of wholeness, of the organic connections which make a living system (organism, society, ecosystem, etc.) able to function. In her exploration of the possibilities of Gaia Theory as an alternative vision, or myth, around which to organize our thinking on these urgent questions, Mary Midgley has provided a framework for relating the scientific insights of Lovelock *et al.* to the deep problems afflicting our culture and society. Her attempt, in her most recent work, to reintegrate our understanding of human society into our view of our terrestrial home is in a deep sense a completion of the task begun in *Beast and Man*, showing the importance, for a sound understanding of individual human nature, of relating this to its origins in the natural world.

Part One – The Roots of Human Nature

CONCEPTUAL PROBLEMS OF AN UNUSUAL SPECIES

The overall theme of Mary Midgley's Beast and Man *is an attempt to deepen and correct our understanding of human nature by connecting and comparing it with our understanding of the nature of other species.*

In the first chapter, 'Have We a Nature?', she examines various traditional approaches to explaining human behaviour, in particular to the understanding of motive. These mostly fall into two types: those that, like Marxism and Freudian psychoanalysis, seek to explain all human behaviour in terms of one or two universal motivations (power, property, sex, etc.), and those that, like existentialism and behaviourist psychology, deny that we have any inborn or natural motives at all – our actions are entirely the product of radical free choice or of conditioning.

She contrasts these accounts with that of ethology, which approaches the study of human motivation on the premise that, being a mammalian species, we are likely to share the general structure of motivation found in such species. This structure comprises a number of broad ranges of motives (often misleadingly labelled 'instincts'), such as territoriality, aggression, sex, parenting, dominance and so on, which can be made sense of in terms of the biological needs of the species.

The idea that we share a large part of our psychological nature with other species does not of course imply that there is nothing unique about human beings. But it does conflict with many traditional philosophical views which try to explain human psychology exclusively in terms of supposedly unique features – generally rationality, consciousness and the capacity for language – thereby implying an absolute, categorical distinction between

Man and Animal. The next chapter, 'Animals and the Problem of Evil', considers the implications of this view, showing how it distorts our idea both of ourselves and of other species. Man (for this is a characteristically masculine view) is seen as essentially rational, other animals (Beasts) as essentially ruled by irrational emotions. Animals become invested with all of the negative, destructive attributes which Man wishes to disavow – we form our image of the Beast on the basis of our own shadow.

'Speech and Other Excellences', taken from the third section of the book, entitled 'The Marks of Man', further explores the question of human uniqueness, in particular the claims that language and rationality respectively have no counterpart in other species. Without minimizing the significance of the fact that these qualities are developed in human beings to a degree quite unprecedented elsewhere, Midgley shows their continuity with the mental capacities of other species. They are grounded in a general need on the part of social creatures to communicate with and understand the motives and intentions of other members of their community. She considers in some detail the empirical evidence that chimpanzees can in fact use a human language at a level far beyond what was previously supposed possible, reinforcing the Wittgensteinian point that the phenomenon of language can only be understood as part of a way of life involving a whole range of complex types of social interaction within a community. Much of this social structure we share, as ethological studies have shown, with other primates; this is the foundation on which the special human achievements of language and culture are built.

In this perspective, rationality is seen not as Descartes saw it, as the capacity for logical deduction, but as the art of striking a balance between the wide range of motives and considerations which bear on our choices. We have, like other social creatures, to arbitrate between our own and others' interests, to weigh the consequences of our actions, to decide on priorities and so forth. Though it might be thought that animals entirely lack the capacity to do these things, closer examination of their actual way of life shows that they not only can do so, but often could not survive if they could not. Again, this does not negate the fact that human capacities in this area vastly exceed those of other species; it does, however, provide a possible explanation of how such capacities could possibly have come into being in the first place.

Sources: 'Have We a Nature?' and 'Animals and the Problem of Evil' – slightly abridged from chs 1–2 of *Beast and Man*, Cornell University Press, 1978; 'Speech and Other Excellences' – condensed from ibid., chs 10–11.

1 HAVE WE A NATURE?

UNDERSTANDING OUR MOTIVES

Every age has its pet contradictions. Thirty years ago, we used to accept Marx and Freud together, and then wonder, like the chameleon on the tartan, why life was so confusing. Today there is similar trouble over the question whether there is, or is not, something called Human Nature. On the one hand, there has been an explosion of animal behaviour studies, and comparisons between animals and men have become immensely popular. People use evidence from animals to decide whether man is naturally aggressive, or naturally territorial; even whether he has an aggressive or territorial instinct. Moreover, we are still much influenced by Freudian psychology, which depends on the notion of instinct.[1] On the other hand, many sociologists and psychologists still hold what may be called the Blank Paper view, that man is a creature entirely without instincts. So do Existentialist philosophers. If man has no instincts, all comparison with animals must be irrelevant. (Both these simple party lines have been somewhat eroded over time, but both are still extremely influential.)

According to the Blank Paper view, man is entirely the product of his culture. He starts off infinitely plastic, and is formed completely by the society in which he grows up. There is then no end to the possible variations among cultures; what we take to be human instincts are just the deep-dug prejudices of our own society. Forming families, fearing the dark, and jumping at the sight of a spider are just results of our conditioning. Existentialism at first appears a very different standpoint, because the Existentialist asserts man's freedom and will not let him call himself a product of anything. But Existentialism too denies that man

has a nature; if he had, his freedom would not be complete. Thus Sartre insisted that

> there is no human nature . . . Man first of all exists, encounters himself, surges up in the world, and defines himself afterwards. If man as the Existentialist sees him is not definable, it is because to begin with he is nothing. He will not be anything until later, and then he will be what he makes himself.[2]

For Existentialism there is only the human condition, which is what happens to man and not what he is born like. If we are afraid of the dark, it is because we choose to be cowards; if we care more for our own children than for other people's, it is because we choose to be partial. We must never talk about human nature or human instincts. This implicit moral notion is still very influential, not at all confined to those who use the metaphysic of essence and existence. So I shall sometimes speak of it, not as Existentialist, but as Libertarian – meaning that those holding it do not just (like all of us) think liberty important, but think it supremely important and believe that our having a nature would infringe it.

Philosophers have not yet made much use of informed comparison with other species as a help in the understanding of man. One reason they have not is undoubtedly the fear of fatalism. Another is the appalling way terms such as *instinct* and *human nature* have been misused in the past. A third is the absurdity of some ethological propaganda.

About the fear of fatalism I shall not say much, because it seems to me quite misplaced here. The genetic causes of human behaviour need not be seen as overwhelming any more than the social causes. Either set would be alarming if treated as predestined to prevail. But no one is committed to doing that by admitting that both sets exist. Knowing that I have a naturally bad temper does not make me lose it. On the contrary, it should help me to keep it, by forcing me to distinguish my normal peevishness from moral indignation. My freedom, therefore, does not seem to be particularly threatened by the admission, nor by any light cast on the meaning of my bad temper by comparison with animals.

As for words such as *instinct, drive* and the *nature* of a species, ethologists have done a great deal of work here toward cleaning up what was certainly a messy corner of language. Much more is needed, and I shall try to do a little of it. Such words must somehow be reorganized, not just thrown away. They are necessary if we are to talk either about other species or about our own.

People may still wonder, however, why we should need, for understanding human life, concepts developed to describe animal behaviour. Perhaps I can best bring out the reason by glancing at a problem we often have when we try to understand human motivation – the shortage of suitable conceptual schemes.

Consider the case of someone (call him Paul) who buys a house with an acre of land, though he can scarcely afford it, instead of one without. How should we describe this 'scientifically'? What should we say he is doing? Plenty of economic descriptions are available. He might be meaning to grow turnips to sell or to supply his household; he might be speculating for resale, or buying as an investment or as a hedge against inflation. It is interesting that even at this stage, where all the alternatives are economic, we already need to know his motive in order to decide among them. The 'facts' of the particular transaction are not enough to classify it, or explain it, even economically, unless they include motives.[3] (Motives, of course, are not just his private states of mind, but patterns in his life, many of which are directly observable to other people.) We cannot say *what* he is doing until we know *why* he does it.

Now, what happens if the motives are not economic? Paul, it turns out, is not trying to make money out of the land at all. When asked, he says that he bought it to secure his privacy. He hates being overlooked by strangers. As his whole conduct is consistent with this, we believe him. Besides believing, however, we still need to *understand* this motive. That is, we want to see how it fits into the background of his life, and of human life generally.

Shall we accept a simple Marxist interpretation, that he is showing off his riches to establish his class status? This will not get us far. Of course people do show off for that reason. But merely saying so does not account for the particular forms showing off takes. The ostentatious rich buy big cars, because those are what most people would like to have if they could. They do not usually display their status by burning themselves to death on piles of paper money in the streets. And it is the basic taste that we are trying to understand. Explaining motives by ostentation is always producing a box with another box inside it. We must ask next; why display *that*? This was the weakness of Thorstein Veblen's view of art as conspicuous expenditure to impress the populace. As later and more subtle Marxists have pointed out, if art is to be worth displaying, it has to have a real point in the first place.[4] Of course a particular ostentatious person can display things he sees no point in. Whole groups within a society may do it; many Romans thus collected Greek art. But this is still parasitical. It depends on acknowledging the authority of

people who do see the point, and treating them as the norm. It needs too, I think, an explicit doctrine that the thing itself actually is valuable, with reasons given. Thus, the more people explicitly praise pictures, or horses, or yachts, or abbeys to pray for one's soul, the more likely other people with no genuine taste for these things are to want them. But this wanting is a *by-product* of the praise. It is not what the praise itself is about. Ostentation, in fact, is just one of the cure-all political explanations which people produce for motives and which turn out circular. The most central case is power. The desire for power is necessarily secondary to other desires, because power is *power to do* certain things, and valuing those things has to come first. Those who really pursue power just for its own sake are neurotics, entangled in confusion by habit and destroying their own lives. Hobbes realized this:

> So that in the first place, I put for a general inclination of all mankind, a perpetual and restless desire of power after power, that ceaseth only in Death. And the cause of this is not always that a man hopes for a more intensive delight than he has already attained to; or that he cannot be content with a moderate power: but because he cannot assure the power and means to live well, which he hath present, without the acquisition of more.[5]

This puts power in its place as an insurance. But Hobbes still made it central and probably never realized how much this circular psychology limited the value of his political theory. I suspect that Marx's position was similar. Nietzsche, when he made the Will to Power a primary motive, did try to give it a more direct meaning. He thought of power as straightforward dominance over other people – indeed, more specifically still, delight in tormenting them[6] – which is certainly clearer, but happens to be false, except of psychopaths.

Now Paul certainly might be just being ostentatious, buying land he did not want, solely because he saw other rich men doing so. But if so, his case would be a parasitical one, and we should need to shift our attention, if we wanted to understand the motive, to some rich man who actually did want the stuff. This same consideration works even more strongly against another equally fashionable, and more respected, shortcut, the notion of conformity. He bought it, some say, because his society had conditioned him to value it. Now (again) some people certainly are so distractedly conventional that they will do almost anything to be like the neighbours. But their existence depends on having neighbours who are not like them, who make positive suggestions. If the neighbours too

did not care what they did apart from conforming, there would be nobody to generate the standards that everybody conforms to. Society is not a subsistent Being, a creative divinity. Not everybody can always be at the receiving end of culture.

Paul, we will say, knows what he is doing, to the extent that what moves him actually is the motive he mentions, not his class or society. Indeed, both may disapprove of what he does, and he himself may even be rather puzzled by his motive, in the sense that its strength surprises him, and that it is not explicitly linked to his value system.[7] In this sense, he does *not* quite know what he is doing. He needs further understanding of what his motive means or amounts to. We all have motives sometimes that put us in this quandary, which is why we badly need to understand our motives better.

His motive then really is the wish for privacy. He 'hates being overlooked by strangers'.

I have picked this motive because it is one on which all the main traditional theories of motive are particularly unhelpful – a fact that may well leave Paul, if he is an educated fellow, puzzled, defensive, and even somewhat ashamed of its force. Freud does supply us with the notions of voyeurism and exhibitionism. But these are positive tastes. How will they explain anybody's *dislike* of being looked at? Certainly there could be an inversion here, a horror of sex. If someone has a morbid and excessive fear of being looked at, we might suspect that it linked up with a disturbance of his sexual life, and there would be ways to check this suspicion. But perfectly normal people want privacy; indeed, everybody sometimes does so unless he is a gravely deranged exhibitionist. And since we do not need (as Freud did) to balance a contemporary concealment of sex by dragging it forcibly into every explanation, we can ask dispassionately whether there is evidence for a sexual motive of any explanatory value. This must be something more than the mere sexual *aspect* which (as Freudians rightly point out) most motivation can be found to have if you really look for it. All the main strands of human motivation – affection, fear, aggression, dominance, sex, laziness – pervade our lives and have some influence in shaping all our actions. Sexual behaviour itself can obviously have its aggressive, frightened, or domineering aspect. But sexual motivation does not seem to help us in understanding the notion of privacy.

Freud's weakness here can be seen in his startlingly perverse and insensitive way of interpreting the nightmare of his patient the Wolf-Man.[8] As a child of five or less, this man had dreamed that, as he lay in bed, his window fell open of its own accord, and he saw six or seven

white wolves standing in the walnut tree outside and staring at him intently. Freud ruled that this dream was not a dream about being stared at at all, but about staring, and that it stood for a (hypothetical) occasion when the child must have watched his parents making love. It does not matter much here that Freud's preferred view was probably wrong, since the Wolf-Man, as a Russian aristocrat, not a middle-class Viennese, would not have been sharing his parents' bedroom. What matters is Freud's overlooking the distinct and primitive horror of *being stared at.* The patient emphasized two things about his dream, which, he said, 'made the greatest impression on him, first, the perfect stillness and immobility of the wolves, and secondly, the strained attention with which they looked at him'.[9] Both these things Freud simply transmuted into their opposites. The stillness, he said, must be regarded as standing, contrariwise, for 'the most violent motion,' namely that of the copulating parents, and the attention had to be that of the child himself staring at them. By these principles of interpretation, anything can, quite literally, mean anything.

In citing Freud at his least helpful I do not mean to travesty him. Of course he was often more sensible than this. But on many puzzling topics, many whole areas of life, he had really nothing helpful to say, because he was not interested in them for themselves at all, only in using them to round out a particular view of sex. And in considering many of these, parallels with other species can be helpful. Staring is one such case. It might seem a small matter, but it is part of a most important complex.[10] Being stared at produces horror widely, not only in man, but in a great range of animal species. In most social creatures, a direct stare constitutes an open threat. Normal social approaches to those one does not know well always proceed somewhat indirectly, with various forms of greeting to show one's friendly intentions, interspersed with intervals of turning away and appearing occupied with something else. And eye contact in particular is at first limited to brief glances, often broken off and renewed. To stare steadily while you approach someone, or to stand still staring after he has seen you, is as direct a threat as can be made. *Why* this should be so is an interesting field for inquiry. It may well have something to do with the fact that predators naturally stare fixedly at prospective prey before jumping on it. And they are of course regarding it as an object, not as a possible friend – which is just the effect a direct stare conveys to a human being. Whatever the cause, so strong and so general is this tendency that a number of species have been able to exploit it by developing eyelike spots on their bodies, with which they frighten off their enemies. Many species of butterfly have

separately developed detailed and lifelike eye-spots on their wings. Displaying these effectively frightens off predators, some of which never attack such a butterfly again. And this effect has been shown to vary according to how closely the spots actually resemble eyes.[11] Human beings, of course, deliberately produce a similar device by painting eyes on things. 'Staring eyes have a threatening effect, and spellbinding eye-spots are therefore widely used as protective devices on uniforms, ships, houses and the like.'[12] Also in advertisements. But because pictures stay still, we are not so much upset by their staring. When a live human being does it, it is most unnerving. Those stared at often feel as much attacked as if they had been actually abused or hit. This is not a cultural matter. I have seen a cheerful baby eight months old burst into tears and remain inconsolable for some time on being stared fixedly at by strange aunts, although the aunts were only vaguely curious and absentminded. Dogs too, as is well known, can be 'stared down'. People sometimes take this as evidence that they recognize men as their superiors, but all it actually shows is that, if you exhibit hostility to someone smaller than yourself, he will dislike it and probably go away. Dogs do not stare at each other except in the challenge to a fight, when the stare appears, along with the obligatory slow, steady approach, the growl, and the bristling hair, as a natural expression of hostility. And the primates seem to avoid the direct stare strongly.

Thus it would be little comfort, if one were overlooked by staring neighbours, to know that they were merely curious. The stare is not just a threat. It constitutes an actual intrusion.

Are we any further on with understanding what is worrying Paul? I certainly think so. If people, like other creatures, quite directly and naturally mind being stared at, this in part explains his touchiness on the subject. But what, you may wonder, about the numerous people who live at close quarters, overlooked, and do not mind it? We should notice that it is primarily *strangers* who cause alarm. People in small primitive societies know everybody around them well. So do people in stable modern neighbourhoods like villages, or indeed old-fashioned slums. They do not always like the closeness, and may move out. But at least they have had time to settle into a more or less tolerable relation with those around them, and there is likely to be some mutually accepted code about not doing irritating things like staring. Moreover they know a great deal about each other already, so curiosity will not be so much of a problem. All the same, some privacy usually is provided. And where communities grow bigger, more of it is at once needed. Chinese and Indian cities have long been large and confusing, full of strangers.

For that reason, the houses became highly defensive – usually closed in by solid outer walls. More clothes are worn; women are locked up; manners, too, become defensive.

And everywhere, not just in our society, rich people who have made good in crowded cities move out and make space round themselves. This matter of what is called personal space is just one part of the complex set of patterns now discussed under the general heading of territorial instincts. I shall say more about it later, though not as much as I should like.[13] All I am concerned to do at the moment is to point out that there really is a range of phenomena here which needs describing, and that animal comparisons help because concepts for describing similar behaviour already exist in that area, and turn out, on the whole, quite applicable. Earlier theories of instinct ignored the matter, without actually denying it. They could leave it alone because, for one thing, nobody was trying to change people's lives radically in this respect. But so drastic have social changes been in the twentieth century that it becomes necessary to state all kinds of facts about our animal nature which used to be taken for granted – for instance, that we cannot live properly in infinite crowds or in conditions of ceaseless change.

WHAT WE CAN ASK OF OUR CONCEPTS

I am suggesting that we badly need new and more suitable concepts for describing human motivation.

The alarming truth is, of course, that it is not only animal behaviour studies that are still in the descriptive phase. Certainly, a particularly deep snowfall of virgin ignorance has till lately been observable there. People in general never knew very much about animals; they had various motives for distorting what they did know, and when in the last two centuries we in the West mainly moved into towns, we cut ourselves off from what little we might ever have discovered. (That is why the recent renaissance of this subject interests us so much.) It might seem, on the other hand, that we know plenty about that much described matter, human conduct. So we might, if we had always asked the right questions and had not been more anxious to deceive ourselves than to learn the truth. But we can always do with new questions. People like Nietzsche, Freud, and Marx, by asking new questions, have taught us much, and it is yet further questions, and a more intelligent connecting of questions, that we still need.

Merely naming an impulse as territorial may tell you quite a lot about it, just as naming it as sexual may. But you will understand much

more if you have an adequate idea of how territory works generally, and still more if you know how it works in a given species, how it relates there to other motives like dominance, affection and aggression. All these general motives are groupings of particular impulses. Personal space is only one aspect of territory. But it is one that matters greatly to all advanced social creatures, including those with no fixed home. And staring is only one form of intrusion.

Freud should never be dismissed as 'unscientific' on the simple grounds that he did not make detailed predictions that could be falsified in experiment. What he was providing was concepts. His general question: 'What is the structure of human instinct?' was a perfectly sensible one. His answer was oversimple and overconfident, but his suggestions still make excellent indicators of where inquiry can start – of what, for instance, must be wrong, but points the way to what is right. He made 'good mistakes' – a most useful habit, the value of which is perhaps more familiar to philosophers than to scientists. He made possible the making of concepts.

A good concept-maker has to be a man of great general intelligence and wide interests, or he cannot make connections with other fields and is liable to produce a scheme that some other study will shatter. But he needs also, and quite as much, to be more or less soaked in, committed to, involved with, and generally crazy about his subject. A long phase of fairly omnivorous observation, of deep receptiveness and genuine wonder, is needed to appreciate the formal peculiarities of the thing one is dealing with, to see *what* about it should be laid hold on for description. That background of experience is the strength of Konrad Lorenz, Niko Tinbergen and their school. They have been animal people all their lives. Their involvement in the concrete has, as Hinde justly says, 'ensured that explanatory concepts have been chosen to suit the phenomena studied, rather than vice versa'[14] – an advantage that is rarer than it ought to be.

But we still have the problem of relating the study of animal behaviour to other ways of studying man. *Homo sapiens* is an animal. (At least he is not a machine, or an angel, or a fairy, or even something from Vulcan.[15]) So it would really be odd, would need a lot of accounting for, if comparative methods that make good sense over the wide range of other terrestrial species suddenly simply had no application to him at all. But *Homo sapiens* is already marked out as the property of the social sciences. And they are because of their early history to some extent committed to the view that he has no nature, or none that can be important, that his behaviour (apart from a few simple physical needs) must be understood entirely in terms of his culture.

The thing we must keep in mind here is that there is room for all methods. No one way of studying mankind has a monopoly or needs one. Innate factors can be ignored for some purposes because they are taken for granted, without therefore vanishing from the scene.

What each method has to do is to establish its usefulness. It must fill a need. It seems obvious to me that we do need to understand human motives better, both what they are and how they connect. There is a load of common-sense lore about them, some of it excellent, some confusing, some worthless. But the intellectual systems that have tried to organize it work mostly by *reducing* many motives to one or a few basic ones – sex, self-preservation, power. They tidy one province, but then they distort themselves in an effort to take over the whole. Human life simply contains more motives, even more separate groups of motives, than they allow for. We have to work out their natural relations, not hack or wrench them to fit Procrustes' bed. Comparison with other species shows possible groupings more subtle and more helpful than these fiat reductions. Certainly this comparison itself must not be used reductively. We must not say 'university departments are really only territories.' 'Only' is an exaggeration. But with that word removed, the remark can still be useful. Similarly, a reviewer put the question: 'on Desmond Morris's own principles, should not his book *The Naked Ape* be seen as the dominance display of a rising male, eager to gain followers and compete for leadership of the troop?' Well, *among other things*, yes. And so should *Eminent Victorians*, *Language, Truth and Logic*, *Les Demoiselles d'Avignon*,[16] and half the papers in periodicals. Human contentiousness is a fact. We could never keep our heads in the babble of controversy if we did not know how to allow for it. Indeed it is just those readers least aware of the deliberately polemical, challenging element in works such as these who are most likely to be drawn in by it, to involve themselves in the amusing but irrelevant game of cops-and-robbers that the authors want to play, rather than sticking to the central questions about the value of what is being said or done.

Still, we say, these motives belong to human beings. Why should we need to look outside the human scene to understand them?

Because (as I have just suggested) our cultures limit so subtly the questions that we can ask and reinforce so strongly our natural gift for self-deception. When we ask why something that is normal in our culture is being done, official answers are always prompt. Spaniards tend not to be short of reasons for bullfighting, Romans for gladiatorial games, totalitarians for torture, Erewhonians for punishing illness. To

break this circle, to make our local presuppositions stand out, fabulists have long used animals. They rely on the shock of a different context to make a familiar pattern visible at last. It often works. But of course its value depends on the power of the fabulist's own imagination, on his being able himself to take a new point of view. The device has a different kind of force when facts are used rather than fiction. When other human cultures are found acting at cross-purposes to ours or caricaturing it by pushing its vices to startling excess, we are impressed, and quite rightly. Here, in fact, we already accept the value of looking *away* from the familiar scene in order to understand it. Many notions first evolved for the study of primitive peoples have been found useful for the study of more complex ones like ourselves, who did not know they had these things because they never thought to ask, but had already half-formed puzzles to which these notions provide the answer. (Examples are initiation rites and crisis rites generally, competitive giving, conspicuous expenditure.) And many half-formed suspicions about our own society have been shaken up and clarified into valuable insights by comparison with strange cultures.

What happens with patterns first spotted in animals is very similar. Someone first detects a pattern in animal behaviour – he finds, that is, a notion that unifies and makes sense of a common sequence of behaviour, say, displacement activity, or dominance displays, or redirected aggression. He then looks at the human scene and sees something similar. So much is traditional. The further things which are needed, and which are now being vigorously developed, are a careful, thorough, disciplined procedure for making the original observations of animals precise and a subtler technique for comparison for checking the different sorts of variation in different species and linking them to their different sorts of causes.

The value of animal comparisons here depends on a simple point about what understanding is, which I think has come home to the public much more quickly than it has to the theorists. *Understanding is relating*; it is fitting things into a context. Nothing can be understood on its own. Had we known no other animate life-form than our own, we should have been utterly mysterious to ourselves as a species. And that would have made it immensely harder for us to understand ourselves as individuals too. Anything that puts us in context, that shows us as part of a continuum, an example of a type that varies on intelligible principles, is a great help. People welcome seeing how animals behave, either directly or on film, in just the same way in which a man who had begun to practise, say, mathematics or dancing on his own would welcome seeing

others who were already doing it, though differently. There has been an arbitrary principle, laid down for a variety of reasons in European thought, that only human activities can concern us in this sort of way.[17] It is false. It comes out entertainingly when people deeply involved with owls, otters, and whatnot are interviewed for television. Toward the end of the proceedings the animal person is asked, rather solemnly, 'And what do you think is the point of (or the *justification* for) spending time on these creatures?' Far from replying, 'Just what brought you here, chum – I like them. They have a life akin to mine, but different – they make me feel more at home in the world – they fill the gap between me and the dead things I have to manipulate – they help me to understand myself,' he usually answers that they are educational for children (but why? except on the grounds just mentioned) or – and this passes as a perfectly respectable reason – that nobody has succeeded in breeding them in these latitudes before. The really monstrous thing about Existentialism too is its proceeding as if the world contained only dead matter (things) on the one hand and fully rational, educated, adult human beings on the other – as if there were no other life-forms. The impression of *desertion* or *abandonment* which Existentialists have is due, I am sure, not to the removal of God, but to this contemptuous dismissal of almost the whole biosphere – plants, animals, and children. Life shrinks to a few urban rooms; no wonder it becomes absurd.

COULD PEOPLE BE BLANK PAPER?

I am sure then that the contribution of ethology is useful and that it can be fitted in without damaging anything worth keeping in the social sciences – though it certainly conflicts with the still influential Blank Paper theory. This theory, though first popularized by Locke, was brought to its extreme form by John B. Watson, the founding father of behaviourism, and was a cornerstone of the original version of that doctrine. Locke himself had meant by it merely that we are born without *knowledge*: 'Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas; how comes it to be furnished? . . . To this I answer in one word, from EXPERIENCE; in that all our knowledge is founded.'[18] He had never doubted that we had *instincts* – that we were born adapted to act and feel in specific ways. However, Locke did supply the language for this further step, and Watson went on to take it. Man, he declared, had no instincts. This mysterious news was remarkably well publicized; there seems to be nobody who studied any sort of social science in English-speaking countries between the wars

who was not taught it as gospel. Its obscurity, however, has made it increasingly a nuisance and no sort of a help to inquiry. Not only do people evidently and constantly act and feel in ways to which they have never been conditioned, but the very idea that anything so complex as a human being could be totally plastic and structureless is unintelligible. Even if – which is absurd – people had no tendencies but the general ones to be docile, imitative, and mercenary, those would still have to be innate, and there would have to be a structure governing the relations among them.

Sensible psychologists have accordingly tended more and more to admit that people do have some genetically fixed tendencies. What makes this admission hard, however, is the very strong impression still prevalent that we have to *choose* between considering these tendencies and considering outside conditions, that we must be either loyal innatists or faithful environmentalists. This polarization seems much like holding that the quality of food is determined *either* by what it is like when you buy it *or* by how you cook it, but not both. Thus Skinner, who in his early work simply ignored innate determining factors,[19] has now for some time admitted that they exist, but still doesn't want them studied, on the ground that they cannot be altered. Knowledge of them, he says,

> is of little value in an experimental analysis because such a condition cannot be manipulated after the individual has been conceived. The most that can be said is that knowledge of the genetic factor may enable us to make better use of other causes.

And again,

> since we cannot change the species of an organism, this variable [species-status] is of no importance in extending our control, but information about species-status enables us to predict characteristic behaviour, and, in turn, to make more successful use of other techniques of control.[20]

How would our inability to effect changes be received as a reason for not studying the weather, or indeed the laws of chemistry? Of course there is nothing wrong with wanting one's knowledge to be useful. But from that very angle, knowing what one *cannot* change matters as much as knowing what one can. Skinner appears to admit this so fully at the end of these two quotations that one expects him to move on to saying that psychology will have to study both. But he never does. In *Beyond*

Freedom and Dignity (1971) he may still be seen apparently holding himself bound, even after recognizing the two complementary aspects, to make an agonizing, and indeed unintelligible, choice between them:

> The ethologists have emphasized contingencies of survival which would contribute these features [aggressive instincts] to the genetic endowment of the species, but the contingencies of reinforcement in the lifetime of the individual are *also* significant, since anyone who acts aggressively to harm others is likely to be reinforced in other ways – for example, by taking possession of goods. The contingencies explain the behaviour *quite apart from* any state or feeling of aggression or any initiating act by autonomous man.
>
> [pp. 185–6, my italics]

An explanation that quite patently can work only for *repetitions* of aggressive acts, and then only for those that were rewarded in the first place, is placidly extended to account for *all* such acts, including the unrepeated originals. More generally, the formula of smooth transition from '*x* as well as *y*' to 'therefore not *y*' reappears constantly, as where he says:

> For 'instinct' read 'habit.' The cigarette habit is presumably something more than the behaviour said to show that a person possesses it; but the only other information we have concerns the reinforcers and the schedules of reinforcement which make a person smoke a great deal.
>
> (p. 196)

More information obviously does exist – for instance, on the one hand, about the effect of nicotine on the human organism, and on the other, about people's innate tendency to suck things. That information, however, is not supposed to concern psychologists. Again, he remarks: 'The perceiving and knowing which arise from verbal contingencies are even more obviously products of the environment . . . Abstract thinking is the product of a particular kind of environment, not of a cognitive faculty' (pp. 188–9). So why can't a psychologist's parrot talk psychology?

There is simply no need to take sides between innate and outer factors in this way. We can study both. What behaviourism, it seems, still needs is to complete its metamorphosis from a dogmatic, fighting, metaphysical creed to an impartial method of study. The strength of behaviourism is that it is a form of empiricism, that is, an assertion of the

primacy of experience over dogmatic theoretical principles in forming our knowledge. So, when it finds a dogmatic theoretical principle blocking our recognition of obvious and pervasive aspects of experience, its interests lie in ditching that principle, even when it happens to be a homegrown one. This has already been done in the matter of admitting data from private experience, something that Watson ruled out on metaphysical grounds as 'the myth of consciousness'. In *Beyond Freedom and Dignity* Skinner admits reality here admirably, speaking of 'the indisputable fact of privacy; a small part of the universe is enclosed in a human skin. It would be foolish to deny the existence of that private world' (p. 191). The question is simply, as he goes on to say, how best to describe it, what conceptual scheme to fit it into. And the same thing is true of innate tendencies.

One thing that hampers a lot of other people besides Skinner here is the tantalizing notion of a single cause. Discussions on the cause of some phenomenon – say, Truancy, Wife-beating, or the Decline of the Modern Theatre – often begin by listing a number of alternative possible causes, and go on to try to eliminate all of them but one. On this list there is often now something called 'the genetic cause'. But as it is not adequate alone to produce the effect, it gets eliminated in an early round of the competition and is heard of no more. But *everything* that people do has its internal as well as its environmental aspect, and therefore its causes in the nature of man as well as outside him. Picking out '*the* cause' often does mean, as Skinner suggests, looking for something that we can change. But in order to see what change is going to be any use to us, the internal factor ought *always* to be investigated, because it is not isolated, but connected with a complex system that will respond in one way or another to anything that we may do. Ignoring it because we cannot alter it really would be rather like ignoring the weather, or the shape of the earth.

I am suggesting, tentatively, that there has been a quiet, but on the whole benign, change in the meaning of the word *behaviourism*. People who call themselves behaviourists now often seem to mean simply that they study behaviour. The *ism* – the defence of a creed – seems to have matured into a more modest *logy* – a name for the topic studied. Such gradual changes are benign because they allow crude positions to be made more subtle without a public outcry. But they are more benign still when they can become explicit. If one drops the general dogma that the only causal factor which can affect behaviour is more behaviour, there is really no reason why what affects it should not be inherited, why there should *not* be innate tendencies. Whether there *are* is an empirical question, not a matter of party loyalty.

Behaviourists could afford to be less defensive. Their becoming so would be a great help in the joint exploring expeditions by various disciplines which are now needed to map the disputed area. At present, social scientists tend to appear on these occasions loaded with weapons and protective clothing – technical language, unnecessary assumptions, and control experiments of doubtful relevance – while Lorenz usually turns up speaking ordinary language and using a very wide frame of reference – wearing, as it were, only binoculars, jeans and a pair of old tennis shoes, but with an excellent homemade map.[21] I try not to let my delight at this spectacle bias me. I know he is in some ways oversimple, and has made mistakes. But I still think he has a far better idea of the *kind* of problem he is up against than most of those present. He has understood that it is no use, at present, trying to make anything look final. And the view he takes of professional rigour is the right one. Rigour is *not* just a matter of ducking down inside the presuppositions of one's own subject and defending them against all comers, but of understanding them so fully that one can relate them to those needed for other inquiries. We do not just have to verify our hypotheses carefully, but also to form them intelligently. As they are bound to tie up with matters that we do not know yet, and indeed with the general structure of human thought, this requires collaboration. It cannot be properly carried out in private, between consenting colleagues who stay within the confines of a single subject.

Lorenz and his party have, however, a difficulty about method which also dogs me constantly in this book. The point of my discussion is to show how and in what cases comparison between man and other species makes sense, but I must sometimes use such comparisons in the process. I think the circle will prove virtuous, however, if it abides by the following rule: comparisons make sense only when they are put in the context of the entire character of the species concerned and of the known principles governing resemblances between species. Thus, it is invalid to compare suicide in lemmings or infanticide in hamsters *on their own* with human suicide or infanticide. But when you have looked at the relation of the act to other relevant habits and needs, when you have considered the whole nature of the species, comparison may be possible and helpful.[22]

This would not be true if the Blank Paper view that 'man has no instincts', that there simply was no innate determining element in human behaviour, were right. But it cannot be right. It is not even clear that it can be meaningful.[23]

ISBN 0-415-34641-X