

minism—it's just intuitively a rather weird place. The second paradox is called 'the principle of permanence and the vanishing of substance' and at this point it seems to me that Professor Blanché's paradox is almost whipped up artificially. He appears to get carried away by the lack of conservation of mass and energy (no 'principle of permanence'), though he is not really comforted that rest-mass is absolutely conserved; and by the fact that 'the atom can only be symbolized by a partial differential equation in an abstract multi-dimensional space. . . . No material property whatever is ascribable to it' (Heisenberg). But perhaps it is just that comparative familiarity has blinded me to the essentially paradoxical nature of these things.

After these chapters the scene is set for the consideration in 'The Regulation of Thought' of how far logical principles have really been

assailed, not only by the theoretical physics described in the previous chapters, but by modern pure mathematics and formal logic. The conclusion is that it is actually reason (and not empiricism) that has seen man through these upheavals, but that reason is not what we thought it was. Logical principles are no longer devoid of content, they are dependent in a fundamental way on their context. There is a very interesting and informed tour of modern speculative mathematics and formal logic, of for instance the law of the excluded middle in mathematics and of the plurality of logics—but the unity of reason.

What distinguishes this excellent book most is the judgment of the author—not a quality shared by many philosophers of science, but a quality which gives this book great vigour.

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NAKED APE OR HOMO SAPIENS? A REPLY TO DESMOND MORRIS, by John Lewis and Bernard Towers. *Garnstone Press*, London, 1969. 134 pp. 21s.; paper covers 8s. 6d.

Anyone who has been taught to admire the scientist for his objectivity and emotional detachment in the pursuit of truth, for his humble subservience to the facts and his willingness to abandon theories at the slightest whiff of contradictory evidence, would do well to explore the literature of the rapidly developing science of human behaviour, among which must now be numbered *Naked Ape or Homo Sapiens?*. Even a cursory examination of this literature will reveal that the scientific process is much less logical, mechanical, and fact-bound, and much more imaginative and personal than is commonly supposed; it will reveal also that scientific controversy, far from being the austere, dispassionate dialogue of popular belief, is, in reality, as lively, passionate, and clouded by prejudice, as any other kind of controversy. As Michael Polanyi remarks in his great work *Personal Knowledge*, conflicts in science very often do not appear as scientific arguments at all, but as conflicts between rival scientific visions.

Naked Ape or Homo Sapiens? is a good illustration of this point, for it presents, not a scientific argument about man, but a philosophical and scientific vision of human nature. Unashamedly one-sided, intensely passionate, its visionary preconceptions quite ineffectively disguised by a veneer of scientific objectivity, the book spiritedly condemns the views of a number of contemporary writers as scientific-

ally 'pseudo' and philosophically subversive, and offers in their place the magnificent Teilhardian vision of man as a 'refutation' of the trio of intellectual evils that the writings of Desmond Morris and others are thought to represent—'Pseudo-science' ('naked apery', man is a 'beast of prey', etc.), Reductionism (the philosophy of 'nothing buttery'), and Pessimism (a spirituality of hopelessness and despair). All three of these contemporary intellectual fashions are eminently deserving of refutation, and John Lewis and Bernard Towers claim to show how they can be refuted 'in the name of science, in the name of truth'. In the event, what does their offensive amount to?

Regrettably, it amounts to very little, because the tactics employed are, with one notable and valuable exception (Chapter Two), mismanaged. Passionate commitment is an essential ingredient of the scientific process, but it can never be a justification for confused argument, personal abuse, bad science, bad philosophy, or for the misrepresentation of an opponent's beliefs, and it is principally in these respects that *Naked Ape or Homo Sapiens?* must be judged both unsound and unprofessional.

No doubt the difficulties of joint authorship are partly responsible for the disappointing quality of this book. Certainly, the very different philosophical backgrounds of the two authors (Marxist and Christian respectively)

cannot have made the task of organizing and executing a concerted attack any easier. In addition, their critical resources have had to be deployed over an extremely wide area, covering not only the provocative views of Desmond Morris, but the phylogenetically related offerings of Robert Ardrey, Konrad Lorenz and Sigmund Freud.

Yet when all allowances are made for these difficulties, the fact remains that many of the arguments used by Lewis and Towers are diffuse, non-scientific, unconvincing, and too often aimed at targets that are either trivial (e.g. Morris's use of the words 'ape' and 'carnivore' in a human context), fictional (e.g. the view imputed to Morris that man is inherently murderous, warlike, and cruel—a view which Morris explicitly rejects on page 175 of *The Naked Ape*), or poorly defined (e.g. the phrases 'innate aggression' and 'beast of prey', both of which can be interpreted in several significantly different ways). Worse still, scientific and philosophical opinions are all too frequently presented to the reader as established scientific facts, a sure sign that passion has outvoted prudence. What on earth, for example, does 'man is infinitely malleable' mean (p. 55)? And what are we to make of remarks like 'There is no more reason to call him an ape than to call him a frog or a fish' (p. 68), 'man is the only really successful type' (p. 80), and 'the immense diversity of moral behaviour in the world today . . . rules out the genetical determination of behaviour' (p. 100)? None of these statements is true, yet they have a certain intellectual consistency about them which seems to derive from what I can only describe as a distaste for the animal and biological in man. Like their Victorian predecessors, Lewis and Towers prefer to emphasize man's 'transcendence' rather than his 'immanence', because to do so seems to them to be more in keeping with their philosophical and religious beliefs about man's uniqueness, dignity and freedom (beliefs, incidentally, which I wholeheartedly endorse). But the scientific truth about human behaviour seems to be, not that it is 'infinitely malleable' or totally free of biological determinants, but that it is conditioned and regulated by a complex, inter-acting network of many determinants—biological, socio-cultural, and voli-

tional. Biological determinants are less important in man than they are in other animals, but they are not unimportant, and it is simply philosophical bigotry to declare that they are. On the other hand, to admit their importance is not at the same time to deny the profound importance of the immense cerebro-socio-cultural gap that sets us apart from the rest of the animal world.

A similar confusion of thought surrounds the question of whether or not it is useful to try to interpret some aspects of human behaviour (e.g. human aggressiveness) in terms of the behaviour of infrahuman animals. To argue that it is useful is not to deny that there are other aspects of our behaviour that cannot be approached in this way (e.g. culture, technology, etc.), and Lewis and Towers only confuse the issue by branding those who do find extrapolation useful as, *ipso facto*, Reductionists. There is a world of difference between Reductionism as an all-embracing philosophical system and reductionism as an heuristic technique, between saying 'man is nothing but an animal' and saying 'it is sometimes useful to study man as if he were nothing but an animal'. Neither Morris nor Lorenz is a Reductionist in the former sense, though both believe that there are aspects of our make-up which can usefully though rarely exhaustively, be studied in zoological terms. Whether they are right or not (and my own belief is that they are) will ultimately be decided by the scientific value of their results, not by the philosophical preconceptions of their critics.

The saving virtue of this book—the reason I would wish to own a copy despite all that I have said—is the excellent chapter on 'Nakedness and Sensitivity' in which the authors put forward an explanation of man's comparatively naked skin that certainly did not occur to Desmond Morris, and which seems to one reader at least to be inherently more probable than most of its rivals. Their hypothesis is cogently and impressively argued in terms of the functional anatomy and adaptive significance of human skin (our 'largest sense organ'), and I can only admit that I found the arguments convincing. As far as I am aware, this particular explanation of human nakedness is new.

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