

Theoria to theory; an international journal of science, philosophy, and contemplative religion.

London, Gordon and Breach Science Publishers.

<http://hdl.handle.net/2027/mdp.39015024593017>

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Theoria to Theory is published for the Epiphany Philosophers by Pergamon Press, Oxford, London, New York, Paris. Advertising office: 4 Fitzroy Square, W.1. (01-387 4455). Subscriptions and orders to: Subscriptions Dept., Pergamon Press Ltd., Headington Hill Hall, Oxford (64881). 7/6 a copy; annual subscription 30/- (for 4 quarterly issues). Postage 7d. a copy extra. U.S.A., \$1.25 and \$5 inclusive.

Editorial correspondence, submitted articles, and books for review should be addressed to The Editor, *Theoria to Theory*, 9, Marion Close, Cambridge.

Editor: Dorothy Emmet.
Associate Editors: George Every.
Joan Miller.
Manager: Ted Bastin.

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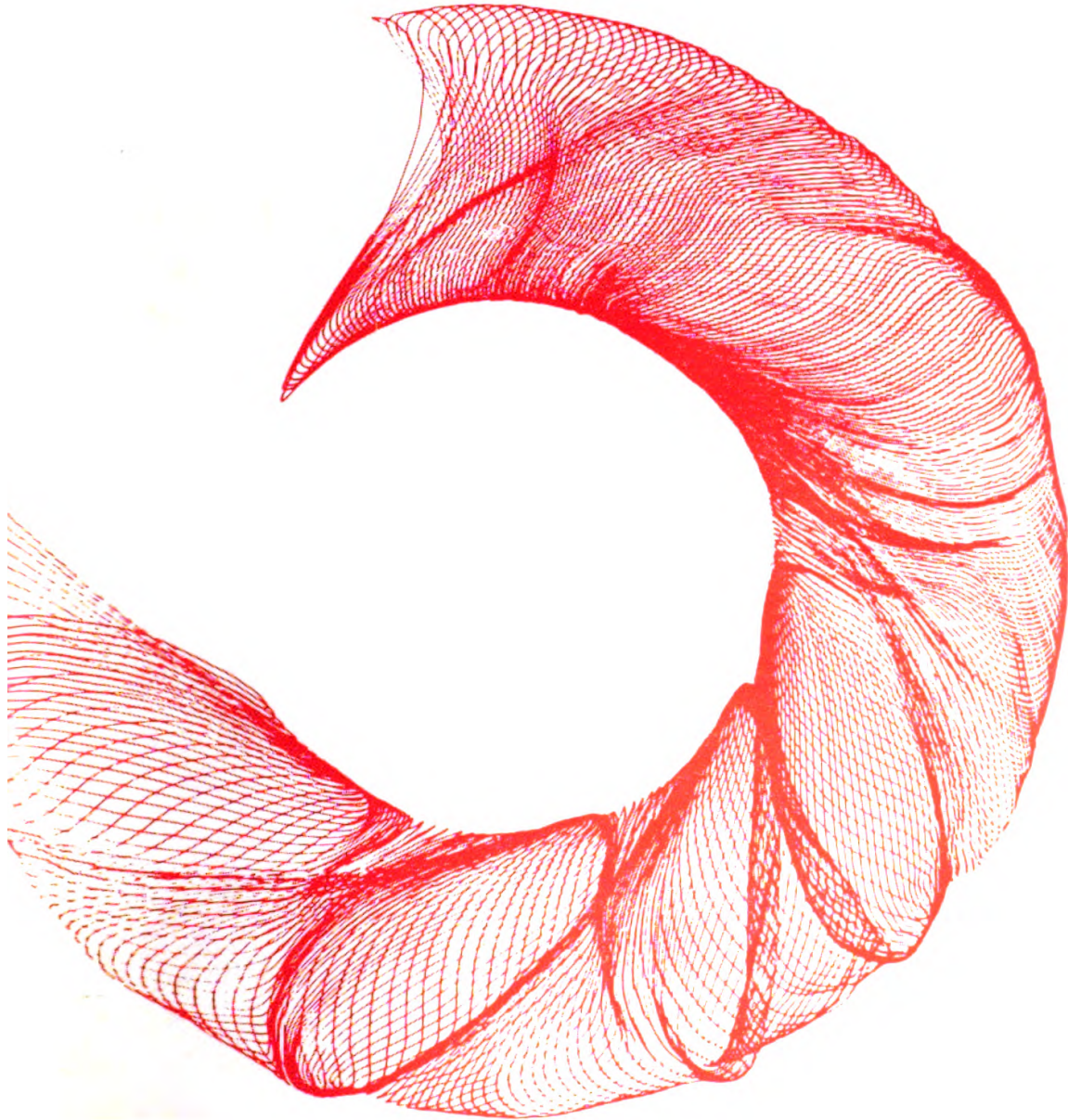
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Andrew Rawlinson

Editorial

Our Dialogue in this number is on Authority; it raises but does not pursue the problem of how the conditions for keeping big institutions going, unless people are alert to them, can get in the way of the conditions which make for fundamental thinking. A big organization breeds a *magisterium*, an authorized body of teaching which gets established, and which produces a standardized pattern of thinking in which people have come to feel at home. Considerations of law and loyalty, as well as natural inertia against having to change our ways, go against spontaneity. Particular elements in the teaching of the *magisterium* may (as Thomas Corbishley says) have been settled in the past by what seemed sufficient criteria of truth for those who decided them; but the criteria of truth for different kinds of question can come to be seen differently as knowledge develops and critical standards get further refined. So questions thought to be closed may need to be re-opened, and we need the will to re-open them. In the case of the Roman Church this is of course complicated by the claim to infallibility in faith and morals and the demand for internal assent to the decrees of authority. In the non-Roman churches, in the Ecumenical Movement in particular, the clear interest in truth gets mixed with the political interest of keeping in step, and not saying what would be unacceptable to the X-ite Church of Ruritania.

Liberal Universities also may be supposed to be institutions set up to pursue fundamental thinking and to invite experiment, but here too (and especially now that they are becoming estates of the realm) there is the pull towards stereotypy characteristic of big organizations. Syllabuses can become *magisteria*, with many hoops to go through before they can be changed; in any case it is assumed that they must produce examinable subjects for recognized types of examination; and every examination is a near-Inquisition. Of course both in universities and religious bodies there are people who manage to experiment within the system, but we have still not solved the constitutional problem of getting the sort of devolution of responsibility which will encourage them to go on experimenting. We need more autonomy for small groups. At present we swing from oligarchy to the kind of democratic participation which leads to people spending half their time on committees. Meanwhile some of the most original characters are contracting out of the system.

As religious bodies, through ecumenism, and universities through civil service penetration, acquire the characteristics of big organizations, the danger is that spontaneity will either get driven out, or damped down into producing minor variations on doing the same things. In matters of thought, questions which have been considered closed need to be re-opened and in matters of practice we need to ask whether there is any sufficient reason why we should go on doing them at all, or why we should not do something else instead.

* * *

The notion of different kinds of "icons" has aroused interest, and we hope to give a good deal of the next number to it.

In this number we have the first of a series of articles on questions raised in Sir Alister Hardy's Gifford Lectures, *The Living Stream* and *The Divine Flame*. We shall ask him to reply at the end.

Some people who have joined us with this number may be wondering why we have the sort of scientific and religious articles that we do. If they look at the editorials of the last four numbers (these are all still available) they will see how we have put the policy behind these.

Peter Rowat's mountaineering article, announced in the last Editorial, is not available. We may not always get an adventure story; people must be allowed time, especially in the summer, to have the adventures. In the next number we hope to have an article on Winifred Coate's co-operative village settlement in Jordan.

Desmond Henry's design on the cover was drawn with a bomb sight computer. We invite readers to send us other designs generated mechanically, for instance with a spirograph.

* * *

A new quarterly journal *Zygon*, is appearing from the University of Chicago Press (5750 Ellis Avenue, Chicago Ill. 60637, U.S.A.). It arises mainly out of conferences between liberal ministers of religion and scientists as to the forms religion should take in a scientific civilization, and its main approach is through discussions of Values, whereas we are mainly looking for interactions between contemplative religion and scientific understanding. We have enough in common and enough to distinguish us to hope that we can help each other.

The Death of God, I: The Death of God and the End of History

Thomas Merton

PROLOGUE

The purpose of these notes is reflective rather than polemical. That certain Christian theologians are saying 'God is dead' is a fact of some cultural and perhaps even religious importance. It is important as a critique of traditional Christian ideas, but it also has a special significance in so far as it preaches a radical 'Christian wordliness'. Since all Christians, both radical and conservative, are deeply concerned with the question of Christianity's relation to the modern world, and since that world is in fact undergoing revolutionary changes which we must admit we do not fully understand, it is appropriate to consider the 'God is dead' theology in some of its practical consequences for all of us who, whether we like it or not, are involved in this revolution. And we may ask: is the 'God is dead' theology really as radical and as revolutionary as it claims to be?

I

First of all: what is meant by the current solemnization of the 'death of God'? It claims to be an act of fervent Christian iconoclasm which is vitally necessary both for Christianity and for the 'world' since without it (so the argument runs) Christianity cannot recover any relevance at all in the modern world and the world itself cannot discover its own implicit and unrecognized potentialities, as the area in which God is most active in his seeming absence. For when we recognize he is 'not there' we act freely and in our freedom he 'is there'. The idea is deliberately left ambiguous, elusive, deceptive. It is paradoxical, dialectical, and it aims to open up perspectives for further development: hence it refuses to make definitive statements once and for all. The Kerygma of the 'death of God' is then, in fact, *not* a categorical affirmation that 'God does not exist' over against a dogma of his existence. Still less is it a declaration that he 'never existed'. It is rather a declaration that the question of God's existence has now become irrelevant. An announcement of 'good news': God as a problem no longer requires our attention.

To begin with, it is no longer necessary (so they say) to assume that because we exist, God exists. In other words, God has for so long been treated as a necessary hypothesis 'to explain our existence' that he is no longer of any importance to us when we cease to need or to desire any such hypothesis. This is a perhaps justifiable reaction against a shallow and basically rationalistic apologetic for Christianity which has surely lost any meaning today : but we may remark in passing that it has nothing to do with an authentic understanding of the God of Christian theology or of Christian mysticism. What is involved however is a repudiation of *all* discussion of God, whether speculative or mystical : a repudiation of the very notion of God, even as 'unknowable'. Any claim whatever to know him, or to know what one is talking about in discussing him, is dismissed *a priori* as infected with mythology. At the same time, it is implicitly admitted that the mythology *was once* relevant, but is so no longer.

The language of theology and of revelation has 'died' on us, so the argument runs. The words have lost their meaning. Or the meaning they have kept is purely formal, ritual, incantatory, magic.

Thus the 'death of God' means also a repudiation not only of traditional theology but also of metaphysics. Sometimes (by Catholics who favour this approach) the 'death of God' is presented sympathetically as the death of hellenistic metaphysics and the return to a Biblical concept of God which is presumably 'non-metaphysical'. The death of God therefore implies resurrection. He is not really dead. This off-hand recognition of the Bible would seem to be too facile, and one wonders if those who make it have really been reading the Bible lately. Is Biblical language really what they consider relevant to modern man? For the more radical Protestant 'God is dead' theologians, this new theology itself is post Biblical, the Biblical revelation of God is discarded, and even theology itself is discarded. The new theology is an anti-theology. Along with God, the Bible, theology and revelation have 'died' too. This is a more consistent and complete rejection of *all* traditionally acceptable language about God. *No* talk of God is acceptable any more, whether Hellenistic or Hebraic, metaphysical or Biblical. There is nothing left but complete silence about God, since God himself is completely silent. What then? A quietistic void? No. The confession of God is replaced by another confession which is explicitly and formally a confession of 'the world' and (only if you are very much in the know) an implicit and secret confession of the nameless one that we don't talk about any more but who is hiddenly present just where the Churches say he can least be : in the depth of

secularity, worldliness and even sin. (The concept of sin is of course dead.)

II

The affirmation of the death of God is then not to be regarded in any way as a metaphysical or theological statement about the ultimate cause or ground of being. It prescind entirely from the actual existence or non-existence of God and goes beyond all speculation on this or any other question. It is the expression of a 'happening' in the consciousness of man. It is rather a matter of 'personal witness', the epiphany of a new state of consciousness, a new mode of being in the world, a new relationship to the secular world. This is a 'confession', both public and 'Christian'. The avowal of the 'death of God' is a kind of Augustinianism turned inside out, a *confessio peccati* and a *confessio laudis* in which the secular world, not God, is singled out for praise, and the sin which is confessed is the sin not of infidelity but of belief. But this cannot be understood if it is regarded as atheism and apostasy (except in a purely superficial sense) because far beneath the surface the *confessio* remains a paradoxical, extreme and kenotic witness to God. A witness of self-emptying in honour of the God who has so emptied himself as to die on the Cross and *not* rise again to resume his former transcendence. He remains only as immanent, empty and hidden in man and in the world. He is present more especially in those who deny him and repudiate him and refuse to recognize him.

One can detect more than a hint of masochism and guilt in the kenoticism of the 'God is dead' consciousness, but perhaps this is blended with a note of genuine humility that is more attractive than the intransigence and aggressiveness of some who take the affirmation of God's existence to be the basis for the affirmation that they themselves are always right and justified in everything because they are believers.

The kenotic witness of the 'God is dead' Christian takes this form : a confession of having sinned against the world, of having insulted the adulthood of man by having believed in a transcendent God. At this one falls at the feet of the world to beg pardon and, by that token, recognizes that 'secular man', the non-believer, who simply experiences God as dead, absent and incredible, and makes no bones about admitting it, is closer to God than the believer who claims, in bad faith, to experience the divine presence. The basic dogma of the 'God is dead' theology is that any claim to an experience of the reality of God and of his relevance for life on earth today is bound

to be fraudulent or at least illusory. The ground of this theology is not a metaphysical or theological assumption about being or about God, but a psychological and epistemological assumption about human consciousness in the modern age. Whereas traditional theology sets explicit dogmatic limits to what can and cannot be rightly affirmed about God's self-revelation, the 'God is dead' theology sets implicit and not clearly defined limits to what modern man is actually capable of experiencing honestly. The basis of traditional theology is a dogmatic and objective divine revelation. The basis of 'God is dead' theology is man's present subjective state of consciousness which can be tested as authentically modern if it corresponds to 'the world of our time' in its historical, technological, political actuality. But just as the traditional believer may assume that his own experience of a saving God (in so far as it corresponds to the *sensus Ecclesiae*), is a valid starting point for any discussion of God, so the 'God is dead' Christian assumes that his experience of the world (vindicated by a certain correspondence with the experience of the nearest available non-believer), is a valid starting point for any discussion of the world and of the modern consciousness.

Thus we find something of the same ambiguities that we have always encountered in the past. The fervent proselytizer who wants to make converts share his own experience of being saved is replaced by the Christian who is completely 'hip' to the modern world and will not listen for a moment to anyone who, he suspects, does not experience the modern world exactly as he does. In so far as he has committed himself to a *confessio laudis* of the modern world, he instinctively regards as suspect any tendency to question or criticize 'the world'. More precisely he resents any questioning of the pragmatic, technological, sociopolitical understanding of the world as autonomous and self-sufficient.

The 'death of God' is thus the proclamation of a self-consciously post-Christian attitude. What is that? A post-Christian attitude is first of all based on an assumption : that the essence of Christianity is the summons to choose between God and the world. Faced with this either/or, the Christian must choose God and reject the world. The sinner chooses the world and rejects God. (St. Augustine spelled this out with his two loves and two cities.) But the post-Christian choice is the reverse of this : to choose the world and proclaim that 'God is dead' is the authentic (rather than 'virtuous') choice. It is the choice of love and openness. To choose God and reject the world becomes the inauthentic, loveless, insincere choice. Why? Because in fact the 'Christian' choice has become perverted by centuries of corrupt and insincere manipulation. Hence the post-

Christian decision is now necessary. If one is interested in saving any vestige of Christian honesty, he must look to the post-Christian choice. In this regard the judgment of man replaces the judgment of God. He who chooses God is condemned by the world for fraud and evasion. Christianity too saw this, but it believed the judgment of the world was to be despised and withstood. As long as the Christian was an authentic martyr, this was quite true. But when his denial of the world became confused with the defence of a Church institution in league with the world, the denial was ambiguous.

In order to understand this more clearly, we have to realize that the confession of the death of God is a bid for solidarity, for communion, for a discovery of a new and more real 'union in Christ' which is outside and beyond the institutional barriers which the Church, in centuries past, erected against 'the world'. Hence we find what is most valid and cogent in the new critique of institutional religion : that 'the Churches' have created a separate world within the world, a world claiming to be 'sacred', while surreptitiously gaining and retaining for themselves every possible worldly advantage and privilege. This ecclesiastical world identifies itself as 'holier' and 'better' than any other society by virtue of external rites and signs, and presumes to condemn and to vilify all that is real, valid, alive, creative, forward-looking in order to maintain its own traditional advantage. That this has been done in the name of God, and that those who do this have claimed, by virtue of their fervour in vilifying the world, that they are the true children of God, has therefore contributed to the 'death of God' in the eyes of the modern world.

We can rather easily understand a reaction against the stereotyped opposition by which traditional religion tended to set up God, the supernatural and the sacred, over against the world, the natural and the secular, in a dualism that no longer seems valid or practical today. Unfortunately, it seems that the 'God is dead' Christian has simply perpetuated this same dualism by turning it inside out : but of course, since he is thinking dialectically, he can be credited with sincerity in saying that he hopes to go beyond this dualistic position to a new synthesis. The tension he sets up between the two poles 'God' and 'world' aims to make us experience the futility of such a tension and to discover that God, who is no longer 'present' as Absolute transcendent Being, is secretly present in the world, where he seems to be absent because entirely immanent. Yet is this a valid synthesis? Is the dialectic really vital, the tension really operative? Or is it simply, once again, a 'four legs good two legs

bad' argument, as in Orwell's *Animal Farm*? (It is true of course that *Animal Farm* culminated in its own peculiar synthesis.)

III

Has the 'God is dead' theology merely substituted 'history' and 'politics' for 'metaphysics' and 'revelation'? And if so, can that theology be called authentically 'modern'? Is it not still implicated in naive nineteenth century assumptions? Is it not simply a belated Christian 'confession' of evolutionism now glorified as a pragmatic, historical mystique? Without pausing here to discuss the New Left Catholics in England (who seem to have something impressive and disturbing to say) we can say that the comfortable 'secular city' theorists in America seem to be confessing the praise of an affluent world that does not need, in any significant way, to be changed. There are aspects of the 'God is dead' Christianity in America which make its professed radicalism seem a matter of journalistic cliché and little more. Nothing could be less revolutionary in fact than a kind of quietism which simply celebrates and glorifies the muzak-supermarket complex and which ultimately points to the conclusion that Los Angeles is almost the New Jerusalem.

Here it may be well to mention that critics of the modern technological world, whether Christian or not, are the worst of heretics for the 'God is dead' theology. D. H. Lawrence, T. S. Eliot, James Joyce, Kafka and others are singled out for special blame. They all look with suspicion upon the modern world, and some of them seek to fulfil their hopes outside the framework of that world. Some of them even hold to the idea that religion is necessary, and that man cannot find any meaning in life without God. On the contrary, says one of these new theologians, the first principle of the new theology is that man has no need of God and as long as he imagines he needs God he is alienated from reality—the reality of his own world. Salvation is to be found in a worldliness which is 'post-modern, pro-bourgeois, urban and political'. This worldliness, incidentally, takes nothing terribly seriously. Or so we are told. It is a fun-worldliness in which 'Life is a masked ball, a Halloween party' and the place where the party is held is 'the city'. Especially the American city, for America is farthest along in the new development: 'We are the most profane, the most banal, the most worldly of places'. The banality of our urban world is not however deplored by this theologian: it is acknowledged, accepted, and rejoiced in precisely because it is a sign of authentic faithlessness. And we must 'not only acknowledge but will this faithlessness'.

And in so doing, we must realize that the seemingly innocent banality of the surface hides a deeper ugliness, which is also to be hailed with gladness: '(the 'God is dead' theologian) knows that his rebellion and unbelief is both deeper and uglier than his bland wordly mask suggests ...' Of course this is more subtle than it seems here : it implies a marriage of quietism and revolt which is a little hard to understand. It *accepts* everything 'with passivity' yet waits for some inexplicable breakthrough, some ultimate coming that will happen in the midst of the urban (or suburban?) bourgeois world. Already the American 'God is dead' movement seems to be an entirely post-Marxian and neo-bourgeois movement.

Hence it seems at times to be considerably less than revolutionary. The enthusiasm for the secular city coincides with fervent praise of American affluence, which is in fact rooted in the enormous military-industrial complex and therefore in the Vietnam war. Though the 'God is dead' movement repudiates transcendence, mysticism, inwardness, divine law and so forth, turning to immanence, outgoing love and creative innovation in interpersonal relationships, its substitution of 'history' and 'politics' for metaphysics and religion may run the risk of ending in conformism, acquiescence, and passive approval of the American managerial society, affluent economy and war-making power politics. Without entering into moral or political polemics on this point, the question I would like to raise is this. It is a question which flows quite naturally from the rather cogent arguments that accuse established religion of having made God incredible and, in fact, of having 'murdered' him. Is the nineteenth century phenomenon of the death of God, which led to the so-called 'post-Christian era', now inexorably followed by a twentieth-century 'death of history' and the 'post-historic', and 'post-political' era? If that is the case, then in abandoning metaphysics in favour of history and politics the 'God is dead' people are jumping on to a dead horse and their hopes of riding somewhere are vain.

Of course here we must be careful. Slogans about fidelity to history and eschatologies which seek fulfilment by political revolution tend to reflect a Marxist type of radicalism. Those post-Christians who are inclined to Marxism are also confirmed believers in an historical responsibility. But the 'God is dead' theology in America already tends, as we have seen, to a more passive and quietistic, a more frankly 'post-historic' attitude. We must recall here the dilemma which was faced by Camus : reviled for being 'anti-historical' (by Marxist critics) he distinguished two extreme positions which he found equally unacceptable : one which, for the sake of power, uses men as material with which to 'make history'—

it sacrifices human beings to an absolute a-prioristic logic of 'history' which is in fact a fabrication—the other which, basing itself on eternal and spiritual values, accepts non-violence and self-sacrifice, but is in fact inefficacious. Camus concluded that both are myths, and that one must be 'neither a victim nor an executioner' (neither a yogi nor a commissar) but work out a dialectic of 'revolt' (as opposed to 'revolution') which consistently refuses to make violence and murder the basis of its system. In his harrowing story of 'The Renegade' he caricatured the Christian who forsook his Christianity to join forces with a historicist and political absolutism. Historicism is of course not 'history'. The question now is: has this mythical reverence for a completely fabricated idea of history so concealed the reality of our development that it becomes a justification for murderous illusions rather than a guide to reasonable action? If so, the Christian who rightly recognizes his historical responsibilities must take care not to be too naive in his reverence for all that is proposed to him in the name of history.

IV

A recent article of Hannah Arendt on 'Truth and Politics' investigates the well known hostility of power politicians not only toward historical opinions which they regard as inopportune, but above all toward *historic fact*. Hannah Arendt investigates the irrelevance of philosophical truth for political action and brings forth other disconcerting ironies, including the fact that 'the blurring of the dividing line between factual truth and opinion belongs among the many forms that lying can assume, all of which are forms of (political) action'. She concludes that the plain impracticality of truth tends to make lying much more interesting for men of action since lying is a form of political action, while telling the truth is not. More and more frequently we observe that the distortion of truth in favour of policy is regarded as political 'realism'. In other words fact becomes ancillary to political *will*. Nor, in this ironic analysis, is rationality at all necessary to politics. Irrationality may prove much more realistic and effective in manipulating opinion and getting things done. There is a political affinity between the desire to change the world and the ability to say, convincingly, that the sun is shining when really it is raining cats and dogs. Not that all politicians are systematic liars, far from it. But a certain distortion always makes things at once more plausible and more persuasive: more likely to be accepted as obviously true. This has probably always been the case, not only among politicians but among all who

make use of rhetoric in order to persuade. (One is sometimes utterly astounded by the pious falsification to which preachers resort in narrating anecdotes that are supposed to edify.) But today, with the enormous amplification of news and of opinion, we are suffering from more than acceptable distortions of perspective. Our supposed historical consciousness, overinformed and overstimulated, is threatened with death by bloating, and we are overcome with a political elephantiasis which sometimes seems to make all actual forward motion useless if not impossible. But in addition to the sheer volume of information there is the even more portentous fact of falsification and misinformation by which those in power are often completely intent not only on misleading others but even on convincing themselves that their own lies are 'historical truth'. Remember Simone Weil's remark 'official history is a matter of believing murderers on their own word'. One of the deeper lessons of Camus's novel *The Plague* is that what is most central, most urgent, and most deadly becomes present to us in life in a way that cannot be accounted for either as news or as history. And we stand alone and helpless, facing what we cannot know, deafened by the 'lie-making machine'.

Is this elephantiasis of the historic and political consciousness in fact leading to the 'death of history'? Not that history will cease to 'happen', but we may altogether cease to know what is happening, let alone understand it. It will happen indeed, but only to be transformed, definitively, into something that it never was. Politics, instead of being a means by which man can change his world, will have become simply the means of converting dishonest political manipulation into bogus 'historical record'.

A really valid concern with history and with politics would seem to assume that one actually knows what is going on and that one is able to make efficacious decisions on the basis of that knowledge. But what if in fact the historical consciousness is merely a consciousness of what is *thought to be happening*, and the political consciousness leads merely to a decision to believe that what was said to have happened actually happened—in order to approve or disapprove it in accordance with an accepted line of thought? Surely in such a case 'history is dead', just as 'God is dead', for the idea of history then becomes fiction which keeps one from being aware of what is going on and from making decisions that are really capable of influencing man's destiny in a free and constructive manner. The historical and political consciousness are then just as much involved in myth—no more and no less—than the consciousness of the primitive who seeks to help nature along by celebrating

fertility rites in the planting season. If to this fallacious and uncritical 'awareness of history' we also add a mystique of man attaining 'full maturity' we may indeed be groping for a way to appreciate our radically new situation in a world of rapid technological development, but should we not be a little careful about elevating this mystique to the status of unquestioned dogma? And of doing so, moreover, on the grounds that 'God is dead'? Does not this sometimes end in a circular argument that God has to be dead because man is now an adult and man now has to be an adult because 'God is dead'?

These are not merely captious questions if, in fact, the 'God is dead' theology results in nothing more than a quasi-Christian mystique of technological man as the summit of the evolutionary process. There is more involved, today, than merely acquiring a new self-understanding that will aesthetically round out man's modern experience and give it a kind of post-Christian coherence. Man is evidently faced with decisions of great importance for his own survival, and he is perfectly aware of this. But he should also be more aware of the deviousness of his own heart and of his own propensity to justify destructive tendencies with moral, religious, philosophical or even scientific rationalizations. The 'God is dead' mystique is as likely as any other to lead to mystification, and more likely when it naively accepts certain political or economic mystifications which are already fully active. The validity of the 'God is dead' theology's claim to iconoclasm will have to be proved not only by the readiness with which it confesses the shallowness of certain Christian myths, but also by its ability to see through secular myths as well. Does the new theology simply 'liberate' the Christian from traditional Christianity in order to subject him to a ready made political or apolitical ideology of questionable worth? Or does it turn him loose in a world without values, to occupy himself with the infinite variety of possible metamorphoses in his own consciousness, his own awareness of himself in his self-creating milieu?

One wonders if history and politics are not already largely self-discrediting. Certainly the efforts of the young (in a desperation which is as touching as it is original) to find entirely new styles of common life and action, suggest that the conventional ideas of history and politics are already, in their eyes, thoroughly suspect. It is not surprising then that they can afford scarcely more than a yawn for a new theology which comes to them claiming to define for them their own experience with terms in which they recognize only the experience of their fathers.

It would seem that the real objection to the 'God is dead' move-

ment is not that it is heretical, unorthodox, too iconoclastic, too radical, 'too modern', but on the contrary that it is a tame and belated attempt to transfer Christian insights from the realm of traditional objective theology to that of a modern subjective consciousness which, in seeking to be perfectly contemporary, is already behind the times. Can such a consciousness appeal to the young who already experience certain hopes and anxieties of another order? What these hopes and anxieties may be I, for one, am in no position to define, but I wonder if they reflect a complacent acceptance of our affluent and highly organized society.

Are we in fact witnessing the death, or perhaps the burial, of 'history' in its conventionally accepted sense of something that we 'make' and which, as the product of our collective actions and decisions, day by day fills up a record of permanent factual truth set aside for future study and reference? Are we deluding ourselves in fabricating a new Christian myth by which we reassure ourselves that the great political mosaic is in fact a kind of jig-saw puzzle in which we (the initiates) know that what is really being formed is the face of Christ? Are we, without knowing it, under cover of these new myths of ours, drifting into a new world of total, predetermined necessity, a new 'system' entirely closed to all liberty and impervious to revolutionary change (except for its own immanent technical revolutionism, determined not by man's will but by technology's own capacity for self-perfection in its own realm, without consideration for man's real needs)? In other words, is the old, sacred, closed, magic and cosmic mystery now being replaced by a new, secular, but equally closed, and equally determined technological mystery? Are we simply coming back in a circle to a world that is enclosed in itself : no longer the world of 'nature' and of 'religion' but the world of technique and of formal and electronic secular celebrations? In either case, a world of necessity and not of freedom, a world in which one has only a certain limited freedom within the confines of a great all-embracing necessity? In the first case, freedom being for the Gods, in the second, for the technological process itself to go its own way and to determine the conditions for everyone's existence? In this event, the 'God is dead' theology would seem to represent not so much an escape from an ancient cosmic religious determinism, as a return to a new 'sacred' enclosed and fully determined universe of technological immanentism in which the only freedom left is the freedom to accept certain innovations in one's life style (long hair, guitars) and to protest against universal sameness by nihilism, dope, riot, crime or something else equally destructive and futile.

This survey of some problems raised by the 'God is dead' theology may perhaps throw light on problems which are common to the rest of us who still 'believe'. On one hand a professed radicalism in religion, which is in reality an attempt to adjust religion to modern developments which it has hitherto resisted—for instance evolutionism, pragmatism, existentialism, Marxism. On the other a 'positive attitude' toward the world and the cultivation of a historical and political consciousness which resolves itself into uncritical acceptance of and solidarity with established social and political forms, familiar managerial societies, whether capitalist or Marxist. But as was suggested above, there are found, in these various 'establishments', certain serious ambiguities which lead one to suspect that we are entering a post-historical era in which the concept of 'history' becomes confused and misleading, and a mystique of history ends in mystification pure and simple. Is our 'turning to the world' merely a matter of abandoning a medieval mystique in order to adopt another which died some time ago—perhaps as a casualty of World War I?

There is in this much-publicized movement a sort of pseudo-creativity which has a certain value. It is iconoclastic up to a point, and it does open up new perspectives. But its iconoclastic thrust is applied where success is cheapest, because resistance is weary, formal and half-hearted. The real idols of our time are not religious, they are secular, and the real challenge to Christianity today is not a matter of mere self criticism and adaptation to the world, but above all the recovery of a creative and prophetic iconoclasm over against the idols of power, mystification and super-control. These tighten upon man and enclose him in a new world of mystery where the myths are no longer religious and spiritual but historical, political and pseudo-scientific.

The attack upon these idols cannot, however, be a mere reiteration of ancient religious values, of spiritual essences, or a mere recovery of inwardness, or a return to eternal principles. Still less can it be an official and ecclesiastical operation vested with every kind of pontifical approval. Such an attack will be futile if it confines itself to the realm of ideas. As Camus pointed out with great intelligence, the combat based on absolute positions leads inevitably to quietism or to tyranny—in other words to idolatries that ultimately paralyze all action. Wherever idols, religious or secular, are set up as absolutes, as necessary, as final, the human and valid response is an affirmation of man in his concreteness, his limitation, his openness,

his potentiality for development. Far from being a mere speculative declaration about man's essence, or a doctrinaire humanism of some sort, this affirmation takes shape in actual human solidarity and communion: against the mass brutality of war and police oppression, solidarity with the victims of that oppression, against the inhumanity of organized affluence, solidarity with those who are excluded from any participation in the benefits of almost unlimited plenty. Where 'the world' means in fact 'military power', 'wealth', 'greed', then the Christian remains against it. When the world means those who are concretely victims of these demonic abstractions (and even the rich and mighty are their victims, too) then the Christian must be for it and in it and with it.

The problem of course is this: in the name of God a worldly Church in the past became integral part of the secular establishment which it officially reviled. Is it any better for a worldly Church simply to claim for itself a niche in the new, more frankly secular establishment by announcing that 'God is dead'? This is not even good pragmatism. The 'death of God' is something in which the new thrones and dominations are no longer even interested. The ritual confession of 'God's death' and the formal expiation of the sin of having once believed is at best an acceptable entertainment in which the post-Christian may momentarily congratulate himself that he has been received into a fun-community and is at one with the demonic powers he can no longer honestly oppose.

NOTE

This essay will probably not be understood by readers in England without a few words of special clarification. First, we are here dealing with the situation in the United States where a certain secular optimism among the 'death of God' theologians, while permitting them to be (some more and some less) liberal in their concern, makes them apparently well satisfied with 'the great society' as it is—apart perhaps from the Vietnam adventure and a few details of life in the racial ghetto. Their tendency seems to be to accept the structure of the American secular city as fully adequate and indeed as the locus of every desirable epiphany. So, while claiming to be revolutionaries in theology, they can scarcely be credited with being especially radical in other spheres.

Meanwhile, since this article was written, the author has read with great interest *The Priest and the Jester* by the Polish Marxist, Leszek Kolakowski, who is quite out of favour with *his* particular

establishment. Here the question of secular theodicy and eschatology is treated with great critical acumen and with no little irony. Kolakowski shows that dogmatic Marxism has fallen heir to all the problems and some of the myths of traditional theology. As soon as history itself assumes the role (once God's) of Judge, Rewarder and Punisher of human activity, secular eschatology itself becomes a pseudo-religious mystification. It alienates man by the very mythology in which he appears to assume decisive control over his own destiny. As Camus said: post-Nietzschean nihilism 'having escaped from the prison of God hastens to build for itself a prison of history'. This goes somewhat further than the present article, and deepens the idea which is here treated (perhaps too metaphorically) as the 'end of history'.

The Death of God, II: Nietzsche's 'Atheism' and the Idea of Truth

Ray Furness

The death of God, as proclaimed by the madman in Nietzsche's *La gaya Scienza*, is portrayed as the most fearful event in all history: man's rejection of Him has plunged the earth into icy nihilism. The madman, appearing with his lantern in broad daylight on the market square, expresses the dreadful consequences of this vision of godlessness: "Do we not wander as through an infinite darkness? Does not the void engulf us? Has it not grown colder? Does not night now approach, eternal night? There never was a mightier deed than this, and whoever is born after us belongs through this deed into a history which is higher than any history before us!"¹ With appalling clarity the madman sees what the end of religious faith will mean: all absolute standards are destroyed, and man is faced with the enormous task of re-interpreting *all* traditional evaluations placed upon life. "You will pray no more, worship no more, you will never more take rest in infinite trust. You do not permit yourself to stand before an absolute Wisdom, absolute Goodness, absolute Power . . . there is now no purpose in that which happens, and no love in that which happens to you".² With the death of God, the madman sees, there is no longer an absolute, be it goodness, truth or love; what remains, Nietzsche implies, is a vision of life in all its nakedness, urgency and power, life at its most fundamental and amoral, stripped of all the categories and moral evaluations that man has laid upon it.

Nietzsche's philosophy is fundamentally a transvaluation of all values. With the collapse of any divine sanction, Nietzsche feels that the value of every belief will now be determined from the standpoint of whether or not it furthers life in this godless, amoral or "Dionysian" sense: "true" is that which promotes existence—existence interpreted as an ubiquitous Will to Power—and even that which is "false" in the conventional sense of the term may be hailed as good if it furthers existence. Nietzsche explains: "The falseness of a judgement is for us certainly no objection to that judgement: perhaps our new language sounds strangest here. The question is asked whether or not this judgement promotes life, maintains life, maintains the species".³ And such a view, Nietzsche knows, is startling, and he who holds it lays the axe at all man's

traditional concepts. "To admit falseness as a condition of life: this means indeed opposing the conventional evaluations in a dangerous way, and a philosophy which dares to do this places itself simply *by doing this beyond good and evil*".⁴ A dangerous path indeed, and one which will lead Nietzsche into an ever-increasing loneliness and final mental disintegration. For the fascinating agony of his thought is the knowledge that there is no absolute truth, if the Christian God be rejected, and that therefore his own so-called "Dionysian" vision can lay no claim to absolute validity. Hence Nietzsche rends himself, and the quality of his thought assumes an unprecedented poignancy.

What makes reading Nietzsche so fascinating is the number of obvious paradoxes that run throughout his work. Unable to stand firmly upon the principle of amoral life affirmation (for there is no universally valid injunction), Nietzsche questions his own "truth" by turning the knife-edge of his thought against himself. A "Dionysian" concept is posited, yet almost at once its opposite is put forward: beneath the sound and fury of the Superman's utterances Nietzsche queries and questions himself as to the value of his intellectual violence. He specifically tells us *not* to take sides with him, but to criticise and attack. "It is by no means necessary, not even desired, to take my side in all this: indeed, a dose of curiosity, as before a rather strange plant, with an ironic opposition, would seem to be an incomparably more intelligent attitude to take to me".⁵ In a letter to his friend Overback, written at the time of *Zarathustra's* completion, when Nietzsche's "Dionysian" life-affirmation is at its most intense and visionary, he wonders whether his amorality and repudiation of conventional evaluation were, in fact, as valuable and dynamic as he had once believed. "My life now consists in the desire that all things may be *different* from my understanding of them, and that somebody would make my 'truths' impossible to believe in".⁶ And Zarathustra himself warns us not to follow: we must be on our guard against him, for perhaps even he deceives: "Now, my disciples, I go alone. Go ye also now, and alone. This is my wish. Verily I say unto you: go forth from me and arm yourselves against Zarathustra. And better still, be ashamed of him. Perhaps he deceived you. You believed in me, but what are believers to me? . . ."

Zarathustra asks us not to believe in him. How far could Nietzsche himself believe in the truth of his writings? In this strange conflict he attacks that which is latent within himself—Schopenhauerian pessimism, Wagnerian Romanticism and also Christianity. Yet could he believe in his own critique? Are not

his ideas perhaps merely experiments which are to test his own as well as his readers' reactions? If there can be no ultimate truth, then can Nietzsche's apostasy be genuine? Is it not perhaps a mask which he dons in order to take sides against himself? Like Kierkegaard (who is both the aesthete in love with life and the religious thinker who sees the ethical need for Christianity) and Dostoevski (who is at once Mitya, Ivan and Alyosha Karamazov) Nietzsche preaches respect for the mask, and the philosopher with the hammer, the man who feels driven to bring down the whole edifice of European metaphysics and morality, can also extol, if not obey, the highest Christian injunction: "To love man *for the sake of God*—that has been the most refined and recondite emotion ever pronounced holy amongst mankind. That love for man, without a sanctifying ulterior motive, is simply another stupidity and bestiality, that this tendency to love man has to receive its measure, its refinement, its grain of salt and speck of amber from a higher tendency—whoever it was who first felt and 'experienced' this, let him remain, however much his tongue may have stammered as it tried to express such a sensitive awareness, let him remain for all time holy and laudable as that man who has flown the highest—and who erred in the most beautiful way!"⁸

The prophet of Dionysus can admire and praise the example of Christ, even although Christ and Dionysus are locked in bitter conflict. For if there is no absolute standard of truth one cannot condemn or praise any particular view according to its inherent "rightness"; one can, however, admire the quality of mind from which such view has sprung. There is, for Nietzsche, a dichotomy between the thinker and the views he expresses: of himself he writes—"I am one thing, and my writings are another".⁹ This explains Nietzsche's great admiration for a man like Pascal, whose views seem diametrically opposed to his own, yet the quality of whose mind is matched only perhaps by Nietzsche's itself, and his contempt for such a thinker as David Friedrich Strauss, whose atheism is shallow, mediocre and completely lacking the passionate intensity and complexity which characterises Nietzsche's own critique.

Nietzsche is trapped in a vicious circle, and the brilliance of his thought is, in fact, a self-inflicted agony. He is unable to eradicate traditional Christian concepts, and the paradox of his own thinking springs ultimately from his inability to separate the idea of God from that of absolute Truth: if one is rejected, then the second must follow. His criticism of certain views held by George Eliot and other English Victorian thinkers, namely, that it would be

possible to reject God and still maintain Christian morality is profoundly illuminating (and would be endorsed by all true Christians): "If one gives up the Christian faith, then one also takes from oneself the right to Christian morality. Christianity is a system, a compounded and compact view of things. If one removes a central concept, for example, the belief in God, then the whole system falls to pieces".¹⁰ God is, then, indistinguishable from morality. And what of truth? And the son of the Lutheran pastor knows that if morality is destroyed, then truth no longer exists, for the worship of truth, the condemnation of deception and falsehood, is a matter of morality. It is wrong to deceive, also to deceive oneself: one should seek truth because it is right to do so. But should not the free-thinker, the man beyond Good and Evil, be indifferent to truth and falsehood? Perhaps—but Nietzsche is not this man. If God is dead, if the good and the true lose their intrinsic intensity, then universal anarchy results. "All is false! All is possible!"¹¹

Yet how is it possible that God should die? Who has killed Him? The madman of *La gaya Scienza* gives an answer to the second question and repeats the first. "We have killed Him . . . all of us are His murderers. But how did we do this thing? How did we succeed in drinking up the sea? Who gave us the sponge to wipe away the whole of the horizon?"¹² It is not until later in the same book that we learn how this monstrous act was possible. "One sees *what it was* that triumphed over the Christian God: Christian morality itself, the concept of truthfulness taken increasingly seriously . . ."¹³ Morality itself, refusing to be deceived, cannot allow the deception of a God, and has dispensed with Him, and the godless one is therefore the most pious of all. The old pope in *Zarathustra* knows that Zarathustra himself, in his inability to commit the intellectual crime of believing in God, is far more "godly" than the believers: "O Zarathustra, thou art more pious than thou thinkest, with such a lack of faith. Some God in thee it was that converted thee to thy godlessness! Is it not thy piety itself, which prevents thee from believing in a God? Close to thee, even though thou wouldst be the most godless of men, I sense a secret scent of balsam and of incense: I rejoice and am saddened here".¹⁴

Here, finally, is the greatest paradox and the most insurmountable dilemma. Preferring truth to deception, truth rends Truth, and Nietzsche's mind, torn upon the rack of conflicts, is finally broken. If morality is destroyed, then reason abdicates; the only solution is madness, madness to sweep away all remorse, doubt and

uncertainty and with them the terror of the spectre of the Law, that spectre which Nietzsche, in his sanity, was never able to banish. That plea for madness of the great visionaries and ecstasies, who feared the harrowings of doubt and conscience, which was formulated in Nietzsche's *Dawn of Day*, is terrible in its intensity and disturbing in its context: "So give me madness, you heavenly ones! Madness, that I may finally believe in myself! Give deliria and convulsions, terrify me with frost and fire, sudden lights and darkness, as no mortal man has ever seen before, with roarings and moving shapes; let me howl and whine and weep like a beast—only let me find faith in myself! I am devoured by doubts, for I have killed the Law: the Law terrifies me as a body does a living man, for if I am not *greater* than the Law, then I am the most abject of all."¹⁵

I have used the Three Volume Munich Hanser edition of Nietzsche. The translations are my own.

¹ II 127.

² II 166.

³ II 569.

⁴ *ibid* 569/570.

⁵ Friedrich Nietzsche: *Gesammelte Briefe*, I 515.

⁶ Friedrich Nietzsche: *Briefwechsel mit Overbeck*, p. 155.

⁷ II 339.

⁸ II 620/621.

⁹ II 1099.

¹⁰ II 993.

¹¹ III 424.

¹² II 127.

¹³ II 227.

¹⁴ II 500.

¹⁵ I 1024.

Dialogue between Tom and Alasdair: Authority

*Thomas Corbishley, S.J., and Alasdair MacIntyre, Professor of
Sociology in the University of Essex.*

Alasdair: There are two sorts of authority about which I feel fairly clear. There is what we might call epistemological authority where authority is invoked to answer questions of the form : how do I know that such and such is the case? This answer is appropriate in cases where one knows that in the matter in question there are criteria for settling what is true or false, and where one knows also that one is oneself in no position to apply these criteria, and yet one has very good reasons for believing somebody else to be in such a position. I can understand how epistemological authority may in fact be in place in a certain kind of religious question : for example when one reads some of the writings of St. John of the Cross to nuns whom he was guiding, one is inclined to say that here is somebody who has experience on matters on which most of the rest of us haven't and it is reasonable to say that in this sort of case one can only take the word of those who have had the relevant experience. That is one kind of authority which I feel tolerably clear about. Then there is juridical authority. Somebody says "I sentence you to death" and to the question "What entitles you to say that?" the answer is "I am a judge, a duly constituted person speaking in a duly recognized place using a prescribed form of words". But obviously if *I* turn to you now and say "I sentence you to death", it doesn't so to speak take; it has no effect. Now it does seem that ecclesiastical authority appears curiously as a blend or confusion of these two. It needn't be only papal authority but any locus of authority for dogmatic pronouncements; for it does appear as though Catholic theology appealed to authoritative pronouncements in such a way that answers are given to questions of fact on the basis of an appeal to the nature of the position of juridical authority of those who make the pronouncement; because they are such persons in such a position, in such and such a place, they are held to be entitled to speak about divine truth. They don't appeal to superior experience or greater knowledge, or anything like that, and hence I find that ecclesiastical authority at least *looks* like a hybrid of an unfortunate kind.

Tom: Well, of course one has to say that these two elements do come in. I don't think there is in principle a confusion: both

kinds of authority are indeed present in the Church. For instance, on this question of dogmatic pronouncements I should say they rely much on what you call "epistemological authority". Here you are appealing to the experience of theological thinking and all the rest of it, and in so far as the Church pronounces on matters of doctrine of this sort, I should have thought this indeed a matter of epistemological authority. There is the other element where the Church applies sanctions, so to say, and in matters of discipline in particular says that unless you do this, that, or the other, we shall excommunicate you or punish you in appropriate ways. I think there is no confusion; that there are these two elements of authority in the Church.

Alasdair: I should like to put the matter of sanctions on one side. It does however seem to me that on the matter of dogmatic pronouncements, although epistemological authority is what would be appropriate, it isn't really what is appealed to. When there has been a papal pronouncement of a *de fide* kind, or equally a conciliar pronouncement, this will have been preceded by an enormous amount of discussion by theologians, but at the end no Pope says "Well, I have listened to the debate, it appears to me that Father de Lubac, or whoever it is, has the best of the argument", and so he comes down on his side. The authority with which dogmatic pronouncements are uttered confers, or is held to confer, an obligation to believe the pronouncement independently of, and certainly additional to, whatever obligation is derived from the pronouncement's being supported by theological arguments.

Tom: I think, frankly, you are rather misunderstanding the situation. I think it is probably true to say that the vast majority of Roman Catholics are not concerned with the theological reasons behind a pronouncement, but the theological reasoning is there. Take what I think is the best example of this sort of thing, the definition of the doctrine of the Immaculate Conception in 1854, which really emerged as a result of a debate that had gone on among theologians intermittently for centuries. The position was crystallized in this way, and though in fact the Pope didn't say that the proponents of one side had the better of the argument, in effect that is how it worked out. Away back in the 13th century Duns Scotus and Thomas Aquinas disagreed over it, as you know.

Alasdair: That can't quite be the case, because in so far as a Papal pronouncement, or a conciliar pronouncement, was nothing more than a record of the conclusion of theological argument it would always be possible to re-open the question. But it turns

out that at some point authoritative pronouncements close the discussion, in a way in which discussions based on purely rational criteria cannot be closed.

Tom: Yes, I see what you mean, and I think it is relevant here to say that even though one believes on authority the doctrine of the Immaculate Conception, it doesn't mean therefore the whole topic is closed, that you can't discuss it further. You can't ask whether this doctrine is *true*, but you can ask *in what sense* it is true.

Alasdair: Yes, I can see that often in the history of theology something which looks as if it were a closed issue is re-opened. None the less a crucial limitation *has* been placed on discussion by an authoritative pronouncement and it seems to be a different sort of limitation from that placed on re-opening certain topics in, say, scientific discussion. Of course, it is quite clear that after Galileo and Newton, certain questions are not worth re-opening again.

Tom: It is not only whether a question is worth re-opening, but whether it would not be illogical to re-open it; when we have achieved something like the law of gravity we don't go back and say "Let's see if we really are right on this thing".

Alasdair: I agree, but I think in Catholic theology it is a different sort of closure, because the reasons one may have for holding certain limited scientific generalizations can be in that context conclusive. But in the sort of topics on which ecclesiastical authority pronounces we don't have conclusive reasons to offer and this is perhaps the heart of the matter.

Tom: I suppose it is. We are not going to have purely logical conclusive reasons, though I should maintain that the element of sheer logic in the broad sense of the word—i.e. discussion of texts of Scripture and that sort of thing—plays a larger part than most people realize, but there are other elements involved—the whole matter of faith—and this I suppose is the hub of the argument; what exactly do you mean by faith, when you say you *believe* this is true, and therefore to you it is inconceivable that you should want to re-open the argument? Here a new sort of element comes in.

Alasdair: What I am worried about is trying as it were to fill the gap between what we believe by rational argument and what we believe on faith by appeals to authority. This is held to give us some ground or reason apparently for believing what we believe on faith.

Tom: Yes, I see the problem. And here one has to admit quite

frankly that the whole element of authority in this matter of dogmatic pronouncements has been exaggerated and overplayed in the past, and I think it is significant that in the recent Vatican Council there were no dogmatic pronouncements, no anathemas, and the general tone was to appeal partly to reason and partly to ordinary human sympathies and understanding of problems, and this marks an important new development in the Church.

Alasdair: But this is still not really answering my point. We might have started from another angle. We might have started from the psychological or sociological end and considered how, in the history of the Church, appeals to authority and discipline have been used. It is quite clear that different periods of Church History have utilized the appeal to authority in quite different ways, and obviously some people have been antagonized by the Catholic religion because of a spirit of authoritarianism which the history of Vatican II shows to have been a contingent historical factor and not part of the essence of Catholicism. What I find difficult is something independent of this kind of change. It is, I should have thought, part of the Catholic Faith that there are certain statements which are an essential part of the deposit of faith which can only be learnt from ecclesiastical authority. I am perfectly happy with the chain of reasoning which argues that, given that the Church has to speak with authority, there has got to be a locus of authority, and it has got to be identifiable. The point however is that when you have identified this authority, you go on to say *that certain statements must be believed on authority*. Now this does seem to me, whenever the authority is localized, to be using a juridical form of authority to back up an epistemological claim, and so to involve confusion.

Tom: Here I think, one would have to distinguish what one might call the simple uneducated Catholic who does seem to accept things solely on authority, in the way in which children or the unsophisticated do accept things on authority because they say "Well, these people know better than I do". I should have thought, though, that the sophisticated, educated, theologically-minded Catholic really follows the argument through and does accept it largely on what you call epistemological authority.

Alasdair: My sympathies are all with the unsophisticated Catholic. The unsophisticated Catholic is being entirely reasonable in a way in which we all are in certain spheres; he knows that some people have more education or more experience than he has, and he relies on that. In parts of Ireland the priest is in a way

analogous to the agricultural expert. That is fair enough, because the suggestion is that anyone could have had this training and experience, although only some people in fact happen to have it. But I should have thought the educated Catholic had to accept the fact that in his faith there were propositions which he could find no grounds for holding, other than that authority had laid them down.

Tom: Oh no, I wouldn't agree with this. I would think the really educated Catholic does want to know why the Church has come to this conclusion, and the handbooks of theology show the grounds for defining whatever it may be. You see, the evidence is there, and you can see how the definition came about.

Alasdair: I think we can put it this way: suppose someone said to you "I have been looking at the doctrine of the Immaculate Conception, and it does seem to me that there are good reasons for disbelieving it", can you say to him that nevertheless it must be true because authority has defined it?

Tom: What I in fact would do with that sort of man would be to go back over the argument and show why the Church had come to that conclusion and do my best to reason with him. It is not that you have got to shut your eyes and just believe.

Alasdair: That's all right. Supposing that after a little he in fact persuades you : the argument runs the other way. What would happen then?

Tom: Well, if he honestly convinced me (though frankly I can't imagine this happening), I should have to admit that I was wrong in believing, which would entail ceasing to be a Catholic. But, I repeat, I just can't see this happening, not because I have a closed mind on the subject, but because the whole of my faith is so integral to the total pattern of my life that I should somehow become a different person if I stopped believing.

Alasdair: You wouldn't retreat into the defence of saying that your failure to win the argument must merely show that you couldn't properly have understood the position of the Church yourself?

Tom: Well, I'm supposing not just an inability to convince him, but his having convinced me.

Alasdair: I think you *have* answered my original point now. I take it what you are saying is that it always will be the case that wherever dogmatic authority pronounces, what it says is the best reasonable conclusion we have available. So in fact if I believe

something on authority, that belief could always under certain conditions be transformed into a belief supported by reason and experience, although I might have to become a saint for this to happen.

Tom: I think in principle this could well be so.

Alasdair: That answers one question only at the cost of raising another. If one looks at those who have made dogmatic pronouncements, one wouldn't say they always appeared very well qualified. So we have to make a distinction between the office and the person, and it seems on your view, that those who hold the office are divinely inspired to utter a conclusion that is in fact the right conclusion, but without being themselves personally qualified to argue on the matter.

Tom: It is important to recognize that practically all the dogmatic pronouncements made by the Church have been made by councils; it is a matter of debate in the council and the truth emerging. As regards the exceptions, e.g. the Assumption, it isn't something Popes decide just on their own authority. There is genuine consultation of the recognized theologians and consultation of the bishops; Pius XII wrote to all the bishops and asked them what they thought about it.

Alasdair: But if all these propositions are presented as part of a whole, in which the Word of God is unfolded, then the question arises whether all the implications which are allegedly embodied in the deposit of faith really do stand on a level, whether we ought to have the same obligation to believe them all.

Tom: To me the two doctrines we mentioned before, the Immaculate Conception and the Assumption taken by themselves are meaningless—they are only meaningful in terms of the fundamental doctrine of the Redemption which I suppose all Christians would accept. They are simply the human way in which we try to express the idea that there is one creature in whom the effects of the redemption were total, and this is expressed in this perhaps rather curious way, to emphasize that, in her, from beginning to end, there was nothing less than perfection.

Alasdair: It seems clear that historical evidence about Mary is quite different from the historical evidence about Jesus. There is a difference between the appeal of the record of the Gospels and the kind of deductive theology which provides much of the substance of Marian doctrine. If someone said, "I don't actually want to deny the dogmatic propositions about Mary : I just don't see there

are good enough reasons for believing them”, he would presumably be in the position a good many theologians were in for centuries after the Aquinas–Scotus debate. Isn’t there something odd about someone who is in this position being excluded from the Church, in precisely the way in which someone who doubted the historicity of Jesus would be excluded?

Tom: Yes, I suppose that is fair. But though I may not be able to see the point, I haven’t sufficient reason for rejecting it and so, having accepted the Church, I say it is O.K. by me.

Alasdair: But isn’t this precisely filling in the gap by appeal to authority in a case in which rational arguments don’t enable you either to affirm or deny?

Tom: I don’t believe, you see, that you can understand the meaning of authority in the Church except in the context of faith. Once you are committed to faith in God, and to faith in Christ, and in his Church, as the living witness to Christ, then the problems of authority aren’t difficult. Can I sum up? I think it is a matter of coherence in the sense that one recognizes a basic pattern to life, and if things fit in with that we accept them and if not, not. And I admit that if the structure must be accepted whole or rejected whole in this way, then the problem of authority is bound to be where we feel the rub. However, you know, I believe this problem of “authoritarianism” is one which is much more apparent to those outside the Church than, except in isolated cases, it is inside. I honestly believe that, as the years go by, I become less and less conscious of authority, as a major element in my personal life. This is much more an affair of commitment to the claims of other human beings, within the framework of my vocation, including my (for want of a better word) devotional life, my personal awareness of Christ and my conviction, strengthened by my historical, philosophical, theological and every other sort of insight, that, despite the warts, the Church is His abiding witness.

Chance and Purpose

John Thoday

A comment on Sir Alister Hardy's Gifford lectures entitled "The Living Stream" (Collins, 1965) with special reference to lecture VIII "Some Problems for Current Evolution Theory".

Regularly over the years there appear books outside the main stream of publications on what we may call orthodox theory of the mechanism of evolution. Many such books contribute little, being based on little scholarship and much misunderstanding and provide evidence only about their authors. A few, like this one, suggest new syntheses, clarify issues that require investigation or add new ways of interpreting orthodox theory and showing its relevance in wider contexts than hitherto. All of them remind us of unsolved problems that have been shelved because of their intractability, but which by act of faith we believe will ultimately find solution in the expanding framework of orthodox theory.

In this book, Sir Alister Hardy proposes to raise beside orthodox theory, and to integrate with it, the concept that behaviour is a selective force which he believes to be a major and neglected component of the mechanism of evolution. He holds the view that behaviour may provide a major innovatory factor, the selection of the environment by the animal being as important as the selection of the animal by the environment.

Hardy sums up what he believes "to be the generally accepted view as to the mechanism of the process (of evolution): the action of natural selection upon the inherited variations which are found within any population of animals or plants and which appear to be due to the chance random changes in the chemical constitution of the nuclear material". This is a brief summary of orthodox theory, which holds that mutational production of new genes, random *with respect to need*, is the primary source of innovation and recombinational production of new combinations of genes its secondary source, but it is an incomplete summary. Contemporary theory does not hold that either mutation or recombination are alone sources of innovation. Neither of these will often produce innovation in a well adapted population since both are regularly recurrent phenomena, and hence most mutants and most of the recombinants that can be produced by existing gene complexes have been tried before, found wanting, and rejected by natural selection. It is only when an old, hitherto rejected, mutant finds itself in a new situation

that innovation is likely. The mutant may then increase in frequency and as a consequence become involved through recombination in wholly new gene combinations and it is these that are the real innovations. In the orthodox theory then, though innovation may sometimes depend either on extremely rare mutational or recombinational events, it will normally depend on change in the conditions in which the population has to live, that is change in the environment. It is change of environment which is the true innovatory factor. A well adapted population must be put into a new situation if evolutionary change is to occur, and, of course, all populations that exist are sufficiently well adapted to do so. Neglect of this aspect of orthodox theory is at the root of much dissatisfaction with that body of theory.

Change in the environment, however, is a very complex concept. The environment of a population varies in space as well as changing in time, and the environment of a gene or an individual changes as it moves in space as well as in time. Further, environment changes with genetic change as well as with external change, the environment of a dwarf pea differing from that of a tall pea, of a colour-blind person from that of a fully colour perceptive person. The environment therefore changes with changes of genotype within the population, and the different members of the population meet different environments. It changes with time as a result of genetic change of all other species that interact with the members of the population whether by co-operation or competition in exploitation of environmental resources, or by preying on or being preyed upon by the members of the population. It changes also with space, most notably at the margins of the population, upon which the successful population is ever pressing, but beyond which the population must be ill adapted, and beyond which dispersal of one kind or other must always be exposing samples of the population to natural selection in, to them, new environmental conditions. Finally it changes in more subtle ways with changes of population size, for not only does the density of a population change its environment but also the chromosomes of an interbreeding population are regularly tested against one another, so that the good mixers are preserved by natural selection. The genetic environment of a chromosome and hence the relative probabilities of survival of a number of chromosomes, i.e. their relative fitnesses, change with the number as well as the quality of other chromosomes to which chromosome has to be adapted.

Anything that changes the environment of a well adapted population, whether its origin be extrinsic, or due to the action of,

or change in, the population itself, by changing the environment of the population or of parts of it leads to evolutionary change of that population through natural selection, providing that appropriate genetic variance is available or arises by mutation. It is clearly in this context that behavioural variation may be relevant. Behavioural variation will bring certain members of a population into new environmental conditions and hence expose part of the population to new forces of natural selection in which the relative fitness of differing genotypes are altered.

Hardy, following Thorpe and others whom he fully acknowledges, discusses this point of view most cogently. In the context of Darwin's Galapagos finches, which have evolved into a range of species with differing feeding habits and appropriate beak morphologies, Hardy asks, "Which is the more reasonable explanation of these adaptations: that chance mutations, first occurring in a few members of the population, caused these birds to alter their habits and seek new food supplies more suitable to their beak and so become a more successful and surviving race, or did the birds, forced by competition, adopt new feeding habits which spread in the population so that chance changes in beak form giving greater efficiency came gradually to be preserved by organic selection?" (p. 174). Hardy is here giving weight to the exploratory behaviour of animals. "The real initiating agent in the process is the new behaviour pattern, the *new habit*".

Thus far Hardy's view differs from the orthodox only in stress, for in effect he postulates that the exploratory behaviour of animals may take individuals beyond the margins of the existing environment and thus bring the population into a new environment. I see no reason to disagree, but would point out that, except in as much as the exploring animal may retreat from the new environment, it is formally in the same situation as that of animals or plants dispersed beyond the margins of the environment to which their parent population is adapted. If they survive they will come under new selective conditions. But genetic variants so dispersed must be adequately pre-adapted to the new environment if they are to survive, and it becomes a moot point whether it is the pre-adaptive variation, the dispersal, or the availability of the new environment that is the innovative factor. Likewise the individuals that adopt a new habit may well be a genetically appropriate and non-random sample pre-adapted to the new habitat the new habit opens up to them : behaviour genetics has not progressed far enough for us to know how often specific pre-adaptations must be relevant to the successful adoption of a new habit.

Hardy has certainly made a valuable contribution in stressing the role that behaviour must play in evolutionary innovation and tying it to the well established demonstration of genetic assimilation, and he is probably right in the view that most of us have underestimated its implications. As he points out, the change of selection with change of habit may sometimes be expected to have most complex consequences. "The importance of the activities and behaviour of the animal in determining its evolutionary fate is most obvious in cases where the animal is in a position to make direct use of a structure in a number of different ways—for example, to use its limbs for climbing, running, digging or swimming—but even physiological characters will also be affected. A change of diet will alter the selective value of digestive enzymes: a higher level of activity or a tendency to explore environments poor in oxygen will alter the selective value of changes in concentration or loading tension of blood pigments" (p. 186).

Further, in the special case where the species concerned has evolved to the level when social heredity is of importance so that the "new habit" discovered by one individual may be copied by its offspring or by less closely related individuals, as in the example of tits learning to open milk bottles, the behavioural innovation will be much more important for it may bring a substantial number of individuals very quickly into new selective conditions. Judgement of the importance of Hardy's point, therefore, depends in part upon judgement of the prevalence of learned behaviour generally. If we judge learned behaviour to be widely prevalent, we may judge behavioural innovation to be of great importance. Nobody will doubt that this has been so in the evolution of man, in fact it is the resulting origin of large scale social heredity and with it what I have elsewhere called evolution by "the inheritance of acquired environment" that has given man his special place on this planet.

Few, however, would raise this question for plants. Neither does Hardy. Nevertheless plants provide just as difficult problems as do animals when we wish to explain the origins of marvellously intricate examples of adaptation so that it is difficult to see how Hardy's postulates help to explain the origin of adaptations generally. Nevertheless Hardy does raise the question for all animals, and it is at this point that his book becomes controversial. His motive for doing so is clearly that he dislikes the chance component of evolution theory, and is searching for design, for final cause,¹ which he

¹ A "final cause" (not a proximal or last cause) is the teleological notion of a cause directing evolution to an intended result.

suggests may be maintained as a group-subconscious, holding the basic pattern of form within bounds consistent with the ultimate design.

Surprisingly enough, in lecture V, "The creative powers of selection", Hardy takes an orthodox view of the evolution of animal colouration, though colour pattern and behaviour must function in relation to one another. Yet he cannot take it when it comes to the question of the basic morphological pattern of a group or the complex examples of organization he treats as problems. He does not consider the point that we know most about the evolution of colour pattern and know very little about morphogenesis at all even at the embryological level so that speculation is freer in the latter context.

One has to ask therefore to what extent Hardy's problems are not created by his need for a final cause rather than merely by our present ignorance. In fact if we look at his lecture VIII "Some problems for current theory" we may legitimately question whether they are real problems in a general sense. The first is "the problem of homology". Only the most naive geneticist could after 1906 have believed, as Hardy said he believed in 1932, that "The same homologous structures must clearly be due to the same hereditary factors handed on generation after generation from the early ancestors with occasional changes by mutation". It was in 1906 that Bateson and his colleagues explained the Emily Henderson, Blanche Burpee sweet pea cross, showing both varieties were white for genetically different reasons. Hardy cannot believe that "the only explanation of homology . . . is that *selection by the environment* is governing the maintenance of all the internal spatial relationships of the animal", but I cannot really see his difficulty. "Selection by the environment" only means that the animal that works in that environment survives and the one that does not does not. And of course any change of one part can only make the animal work better in that environment (or any other) if that change leaves the animal organized. In other words change to be viable must conform to existing organization (which I might call "Empedocles' principle" [see below], and which another recent book *Internal factors of evolution* by Lancelot Whyte tried to raise into a "new principle" of evolution). Organization must be continuous, so that evolution is a historical process that can only build upon the past. It is an open ended process but every evolutionary stage limits the number of possible futures and homology is a logical consequence of this, especially since natural selection is more regularly conservative than creative, a point Hardy seems to have missed. Again, in discussing the transposition of segmental

position of limbs or change in relative growth rate, Hardy seems to forget that individual development is, as it has to be, an organized process, and that mutational changes affecting one component of the developing organism must have consonant consequences on the development of other parts. Here is a point on which many commentators have gone astray, and thus found difficulty in believing that "random" mutations may produce organized effects. A mutation directly affecting one organ cannot be considered as affecting that organ only, because the different parts of an animal interact in development, so that the different parts develop in co-ordinated ways. An extreme mutant may affect the development of an organ to such an extent that this co-ordination breaks down: if so it will be rejected by conservative selection. Only organized organisms can exist so that their organization is no different reason for surprise than their existence.

Now the organization of development is little understood. But we do know that embryonic tissues have wider potentialities than are actually realized in development. The different parts of an embryo inhibit neighbouring parts from developing the "wrong" way and promote their development in the right way, and the result is that changes in one part produce co-ordinated changes in others. Many mutants are known which alter such control in drastic ways, such as producing a leg-like organ instead of an antenna. Environmental or experimental manipulation can have similar effects showing the multipotency of the parts when the control is altered. If a child breaks a bone in the upper arm and it is displaced, provided the arm is kept hung right so that the weight stresses are suitably placed, new bone will form in the non-bone tissue, and the displaced bone will dissolve away. One can see the new bone as fibrous looking lines on X-ray photographs within a week. In the face of such facts, I find no difficulty in the fact that the leg may be produced by segments 25 to 30 in one vertebrate and 8 to 10 in another, or in regarding the resulting legs as homologous, for surely it is the processes of development that are homologous, rather than the end results. There seems to me no need to postulate a final cause or archetypal design to explain these problems of homology that Hardy raises.

The second of Hardy's problems or puzzles is provided by what Medawar described as class B adaptations, all characteristics which could be acquired by use but are laid on in advance by development. Both Hardy and Medawar find most difficulty with the fact that "at birth a baby has a complete pattern of dermal flexure lines". Hardy states (p. 224) that "I must refer the reader to his full

discussion of these interesting problems: I mention them here because the class B adaptations are in general those which are most likely to have been formed by the method of organic selection (or genetic assimilation if you prefer it); *however*, Medawar points out a difficulty which has to be faced. As he says:

'... the selective forces are *sometimes* relatively obvious: if it is advantageous to have thickened feet at all, it will be advantageous to have them ready made when the foot is first put to ground. With other adaptations the selective advantage is much less obvious. What can be the value of genetically prefabricated flexure lines of the hand?'

What indeed? I borrow this question as another in my list of the difficult problems evolutionary theory has to meet".

I need only stress that one does not have to experience pregnancy to know that an unborn baby may be very active! In fact this activity is surely part of the developmental process. The developing attachment of muscle to bone, the developing relation of bone end to bone socket are kept under control by movement. The stretching of tendons controls the direction of elongation of cells and so on. Perhaps the dermal flexures of the new born baby's hands *are* a consequence of use.

Again I find his examples of flatworms acquiring weapons from the hydra they eat no different from other examples of the intricacy of biological organization (p. 229). "*Technitella legumen* constructs a long cylindrical case entirely of sponge-spicules it has picked up from the sea-bed (Fig. 69); Heron-Allen and Earland described it as follows:

'The shell wall consists of two distinct layers of spicules: an outer layer, in which the spicules are all laid with their long axes parallel to the long axis of the test; and an inner layer of spicules laid with their long axes at right angles to the outer layer. We thus get as close an approximation to 'woof and warp' as is possible with a rigid, non-flexible material, and it is obvious that the strength of the test must be enormously increased by the crossing of the two layers, as resistance to tensile strain is given in two directions instead of one'."

This I find if anything less remarkable than the fact that unicellular plants can manufacture their own cellulose fibres and lay them down in just the same way as warp and woof in making their cell walls, and I see no need for fundamentally different explanations of the two even though one does involve what is conventionally called "behaviour" and the other does not.

All these would seem to be examples of the organization of organisms which must be organized if they are to exist. Because they must be organized if we are to observe them, it seems to me that the fact that they are organized can tell us nothing of how they came to be organized.

I would say the same of each of Hardy's problems except the last. This latter, an example of the beautiful and complex patterning of male birds, Hardy clearly misinterprets, because, I think, of his behavioural bias, when he says (p. 232) "Such colour patterns and behaviour, we now realize, are mainly concerned with stimulating the female to co-operate in the sexual act and to maintaining the bond of partnership between the pair till the family are reared". Hence his puzzle that "with the great variability of the gene complex . . . I remain surprised that the design, the *plan* of its layout, is indeed so constant". He has missed the primary function of such patterns. Their origin, and their contemporary stability, must relate to their other function, not as stimulants, but as discriminators. They surely originated as part of the isolation mechanism that keeps the species separate from other species. Conservative selection will continually function to keep the pattern constant despite the genetic variation available, for it must preserve both functions so that the species will remain isolated and continue to reproduce. If either failed the species as such would cease to exist.

Once this is understood this becomes but another example like all Hardy has raised, as have many before him, where the problem is to explain the co-ordination of behaviour and morphology, of the development of one organ and another functionally related to it. His problems are all examples of the old problem: the evolution of organization, marvellously intricate and appropriate organization in manifold variety. And so the influence of Paley's argument from design comes in. Can such design originate by the selection of random chance mutations or must we invoke some teleological principle, some final cause?

But, and with this *but* the cogency of such arguments must fall. I repeat that if organisms were not organized they would not exist. Back to Empedocles who postulated that life originated as a collection of spontaneously generated limbs and bodies and heads, which combined at random to form animals. Of these only those which functioned survived, hence the origin of organisms (and a rational explanation of a few mythological monsters into the bargain). Empedocles was at least clear that organisms must be organized if they are to be. That they are can provide no evidence as to how they came to be so. The selection of chance mutations

must produce design just as much as direction by deity, *élan vital*, or anything else, and in a heterogeneous changing environment presenting manifold potential habitats it will produce design in manifold variety.

I therefore feel that Hardy has failed to show that there is any necessity to add any substantial new principle to orthodox evolution theory. He leaves me with the quotation from Simpson that he uses early in the book (p. 14) still perfectly acceptable. "It would be brash, indeed, to claim complete understanding of this extraordinarily intricate process, but it does seem that the problem is now essentially solved and that the mechanism of adaptation is known. It turns out to be basically materialistic, with no sign of purpose as a working variable in life history, and with any possible Purposer pushed back to the incomprehensible position of First Cause".

But I would take issue not only with Hardy, who is searching for justification for his thesis, but also with Simpson who concludes that "Man is a result of a purposeless and materialistic process that did not have him in mind". Both fail to realize that unpredictability may be perfectly compatible with design and purpose in the Universe, and Simpson seems to miss the possibility that the Universe might have purpose even though the purposer did not have man in mind.

First let us consider what the prerequisite of continued life on this planet is. It is that living things once originated must be able to survive contemporary conditions and leave, over the long term, descendants capable of surviving future different conditions. Now, unless we suppose that primitive early life on this planet was always *able to predict* future conditions, something that we ourselves are pretty incompetent at, then the prerequisite of continued survival is ability to adapt to an *unpredictable* future. The only way to do this is to generate variance at random in sufficient (but not excessive) quantity, which, as I have discussed elsewhere, is exactly what the genetic systems of successful organisms do. Most such random variations are undesirable and are eliminated by stabilizing selection which I have here called conservative selection. But the continued production of such variation is a prerequisite of survival in the unpredictable future. In other words the need for a random chance component in evolution is built in to the design of the Universe if indeed the Universe is designed. Chance therefore is a component of design. Indeed I would maintain that it is the key to understanding the design, or purpose of the Universe.

It is only if one is prepared to accept that in some at present

unknown, hence mystic, way organisms have always been aware of the needs that the future may impose upon their descendants that we can escape this conclusion.

Hardy accepts this and his position is self consistent. He does so because he seeks design and seeks it as a final cause. I cannot accept it because the whole notion of final cause is antithetic to me. It makes the whole of evolution past and future predictable, closes all the open-ended questions, negates all freedom, requires that every quantum jump, every mutation, every genetic recombination, every act of choice, be wholly determined in time and place, and makes nonsense of my sense of responsibility.

Further I find it impossible to make sense of a creator who could gain anything from the creation of a wholly predictable Universe. Contemplating one's own image provides limited satisfactions. Man made in the image of God seems to me a lesser purpose than Man, or rather something better, that is self-created. If therefore we were to postulate a Creator, would we not be forced to suggest that for the creation to have purpose its consequences must be unpredictable? A random element must be built in and left to function without interference so that there shall be interest in the outcome. A wholly predictable Universe makes no sense to me. But it might make sense to suppose that the purpose of the Universe is that it should create something unpredictable with whom community could prove worthwhile.

This argument is I am aware, naive. But I think it less so than Paley's argument and all those related to it. Evolution on this planet is a historical process in which chance plays its part and as such is not in detail predictable. Every event, whether "caused" or not, limits the infinite number of possible futures to those including that event in their past. There may remain an infinite number of possible futures, for at the beginning there were doubtless an infinite number of infinite numbers of possible futures (most of them leading to an early extinction of life here but perhaps to more interesting creations elsewhere!). Chance played its part at many places, but the surviving organisms must appear designed. If the Universe itself was designed for a purpose, chance is part of that design and there can be no finality in arguments that attempt to evade it.

This book is sincere, self-consistent, well argued, and worth much study. It has done much to aid me to clarify my thoughts on design and chance and hence I have found it a book of great value even though, as I have tried to make clear, I think much of it is fundamentally wrong.

Brains and Computers

J. S. Griffith

There are many contemporary reasons for being interested in comparing brains with computers. Indeed there is already in the Press and in everyday conversation a tendency to talk of the two, if not quite interchangeably, at least as if they were two different manifestations of the same kind of entity. On the one hand, a computer is often called an "electronic brain" while, on the other, one talks of men being replaced in their jobs by computers.

In spite of this, we have no certainty yet about the extent to which the modes of internal operation of human brains and present-day computers are similar. Both are made of numerous subunits but these subunits differ from each other very much in detail in the two cases. The computer is built mainly out of electronic circuits and magnetic storage units which operate in a digital, usually binary, fashion. That means that, rather like an electric light switch, each unit has typically only two stable configurations. Although a nerve cell has certain "digital" aspects to its behaviour, it is much more complicated and certain of its operating characteristics, such as its internal electrostatic potential, are continuously variable.

But although we know a lot (but not nearly enough) about the properties of individual nerve cells, we still know very little about the ways in which they are linked together. To use words from the electronic field, we know very few of the details of the wiring diagram of the nervous system. Nor, in spite of possessing various hypotheses, from the early and still plausible speculations of Tanzi and Cajal¹ onwards, do we have any convincing experimental evidence about the actual physical form in which memory is stored.

Because of this, we are unable at present to answer many questions about the relationship between the general principles of construction of computers and brains. I do not think this difficulty reflects any fundamental philosophical problem, but rather our ignorance of the details of one of the partners in the comparison. For example, although people often talk loosely of the "programming" of the human brain, there is really no evidence yet as to whether anything "stored" in the human brain can reasonably be regarded as at all similar to a program in a modern digital computer. In a recent book,² I have given a hypothesis about the principles of construction of mammalian brains and, if this is

correct, the operation of the human brain is very different indeed from that of a digital computer.

However, because brains and computers can perform similar calculations, even if possibly in very different ways, we can try to compare their overall capabilities in this kind of respect. In this article, I shall take just two—memory capacity and speed—and shall try to give rough numerical estimates of each. I shall do so in terms of the units “bits” and “bits per second” which derive from the science of information theory.

“Information” is a word which is used in many ways in the common language, even by scientists, and information theory provides a particular way of assigning numerical values to it. The theory was originally developed by Shannon, at the Bell Telephone Laboratory in America,⁸ and is usually regarded as a statistical theory. However, the conditions which need to be satisfied in such an approach are more restrictive than is acceptable in many biological situations, and therefore we introduce the idea of information capacity from scratch without assumptions of a statistical nature.

We start with the example of a valid voting return in an election involving two candidates. Such a return will have been filled in in one of two significantly different ways. It records which choice, out of two possible choices, the voter has made. It could be called a two-choice store of information. Similarly for n candidates, with the possibility of voting for one only, our voting paper forms an n -choice store.

Alternatively we may think of an n -choice store as being an entity which can be set into one of n possible states. If each of these states is correlated with some different possible event, then we may set the store in the state corresponding to one of these events as a mnemonic or memory for the event corresponding to that state. A typical example here would be the notices often hung in shop windows which have two possible states, one presenting to the outside world the word OPEN and the other the word CLOSED.

Evidently the capacity of such a finite information store can only sensibly be taken to be either the number n of states, or at least some function $f(n)$ which increases with n . A suitable form for $f(n)$ is suggested by consideration of what happens when we put two stores together to form a joint, larger, store. If the two constituent stores have, respectively, x and y states then the combined store has the product, xy , different states. It is natural to hope that we could define capacity in such a way that the size of the combined store should be the sum of the sizes of its constituents.

Thus we require

$$f(xy) = f(x) + f(y) \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

for each positive integer x and y . There are many different possible functions which satisfy this equation. However, if we also impose the condition that $f(n)$ should be a positive and increasing function of n , the only possible kind of solution is given by

$$f(n) = a \log_b n \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

for any constants $a > 0$, $b > 1$. It is usual, although not universal, to choose $a = 1$ and $b = 2$. Then

$$f(n) = \log_2 n \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

and we shall use this particular choice and drop the suffix 2 in equation (3).

Now let us consider a store which consists of N switches in a line, each of which may be put up or down. If $N = 1$, the store has two possible states. If $N = 2$, it has $2 \times 2 = 4$. If $N = 3$, it has $2 \times 2 \times 2 = 8$, and so on. Hence, for any N , the store has 2^N states and a capacity of N . On the other hand if we represent "up" by the digit "1" and "down" by the digit "0", any state of the store gets represented by a number in the scale of two and having N digits. Conversely each such number corresponds to a state of the store. Because of this relation between a store of capacity N and numbers with N binary digits, it is customary to say that any store with n distinct states has an information capacity of $\log n$ bits of information. Here "bit" is the conventional abbreviation for "binary digit". However, note that we still have $\log n$ as our capacity when n is not an exact power of two.

Now let us note what I think is the most important thing about this definition and approach to information content. It is just that it contains no mention of probabilities. Shannon's statistical theory of communication does in fact lead naturally to the same definition of information capacity.³ But that approach is more restricted, for it has nothing to say about situations for which probability has no meaning. A store of information may indeed be used when we do know in advance the probability of occurrence of each of its states. An example here would be the coin thrown at the beginning of a cricket match to determine which side goes in first. We hope the probabilities are equal for heads and for tails. But such situations are on the whole the exception. Again, it would seem that, at the very least, it is not obvious that all the events in an animal's life can usefully be treated in probabilistic terms although presumably some may. For this reason it is useful to have a definition of information capacity which transcends the probabilistic situation.

Important examples of stores are easy to find. An essential part of a modern digital computer is its "memory" and one may specify the storage capacity in terms of the number of bits of information. Each bit usually gets stored in a separate position, although it is obviously not necessary for the operation of the machine that this should be so.

Another well-known store is the genetic molecule DNA. DNA is composed of a linear sequence, each component of which is one of the nucleotides Adenine, Cytosine, Guanine and Thymine.⁴ In each position, therefore, there are four possibilities. Hence in a molecule of DNA having n nucleotides, there are 4^n possible sequences. So the capacity is $n \log_2 4 = 2n$. DNA is a store of genetic information and, largely at least, is used to tell the cell in which order to string amino acids together when it forms proteins.

Let us return to the digital computer. Its memory capacity, then, may be given numerically in terms of bits. Obviously different computers have different capacities. This is often so even for two computers which are made by the same manufacturer and have the same name, because a given user may buy a larger or smaller memory depending on his needs and his finances. A typical modern computer would have a fast core store in which it had access to any part within 1–20 microseconds, depending on the make of the computer. The computer's fast store would typically have a capacity of between 10^5 and 10^7 bits. The computer might then have a slower access store based perhaps on magnetic tape or magnetic disk storage, with a capacity often extending to 10^8 bits. Magnetic storage devices with very slow access times and capacities of up to 5×10^9 bits are available and 10^{12} bit capacities are mooted. There is no reason why very much higher capacities should not be available one day. In fact the upper limit must be something of the order of the number of atoms in the storage material. For it is possible to conceive, in principle, that each atom or at least each small molecule might be made to carry a bit of information depending, perhaps, on its orientation in the material. This would give, then, an upper limit approaching 6×10^{23} bits per gram molecule of storage material. The practical difficulty is not to find materials in which each molecule can have either of two or more orientations, independently of the arrangement of the others. Solid carbon monoxide is an example of a material in which, at any site in the crystal, the molecule CO may be either CO or OC, more or less independently of its neighbours.⁵ The problem is to "read in" the information, i.e. to control which orientation is taken up, and to "read out", i.e. to measure which

orientation has been adopted by one particular molecule, specified by its position in the crystal lattice.

What is the human memory capacity? Here we must readily admit that we do not know. However, we may get some very rough idea by trying to give upper and lower limits to it. A lower limit for any given person may clearly be obtained by listing the different things he does know, assigning an information content to each—not necessarily an easy matter—and adding them up. Any such estimate is a lower limit. As written English consists of a sequence of symbols, it is possible to estimate roughly its information content. Shannon has obtained a figure of between 0.6 and 1.3 bits per character.⁶ So, when one learns a poem or a piece of text, an approximate figure may be given to the information content. People are said to have learnt Homer or large parts of the Bible by heart which would give in each case something of the order of 10^6 bits. If one did nothing else, perhaps one might in a lifetime learn the whole of the Encyclopaedia Britannica. Perhaps not. But if one did, one would have stored 2×10^8 bits. A reasonable extreme lower limit, then, is probably between 10^7 and 10^8 bits.

An upper limit to the amount actually stored may be obtained by estimating the maximum amount of information, x let us say, which can be acquired per second, and then multiplying by the number of seconds in a lifetime. A typical lifetime is less than 100 years, which is about 3×10^9 seconds. Hence at most $3 \times 10^9 x$ bits can be stored in such a typical lifetime. Of course, this will be very much an upper limit, because one will presumably not always be acquiring information at the maximum rate, especially during sleep. Furthermore, it is likely that some if not most of this information is subsequently forgotten, in the sense of being irretrievably lost from the store.

x is the amount of information you can extract from your environment in one second. As we all know from playing memory games, this is rather limited. Although people often speak loosely of “photographic memory”, there is no evidence that anyone can glance briefly at a scene and remember it in the fine detail that a film picture holds.⁷ The information content of such a picture would depend, of course, on the grain size among other things. For example, in a typical medium-sized newspaper picture, the information capacity is about 10^5 bits. In fact, however, all carefully controlled scientific experiments give the amount of information which can be extracted in a short period of time in such experiments, and reproduced, to be much smaller than this—

normally not much more than 10 and much less than 100 bits per second.⁸ Of course, if you wish to argue that we do in fact record our environment continually with photographic accuracy but for some reason cannot get at the record, it is not possible to prove you are wrong. But, on the other hand, there is no convincing evidence that we do.

If we take $x = 100$, we are led to an upper limit of 3×10^{11} bits. Therefore our estimates of memory capacity do not put the human brain in a class greatly different from the largest existing computers in this one respect. Certainly our estimates may be very far wrong; however, I think it would not be reasonable at the present time to expect the capacity to be vastly greater than 3×10^{11} bits. We shall only know what it actually is when we have a generally agreed theory both of the fundamental organization of the human brain and of the physical nature of memory, which is not the case at present. However, it is interesting to ask what sort of capacity one might expect from a consideration of the arrangements of the nerve cells in the brain. In the human brain there are about 10^{10} nerve cells.⁹ Each cell may be linked to a large number of other ones, often to at least 10,000 others, although these connections are by no means at random.⁹ If we adopt the traditional view¹ that memory is based upon the growth or atrophy of such connections, depending on the extent to which each is used, and also suppose that each cell has 10,000 others to each of which it is linked either weakly or strongly, we can make a rough calculation of capacity. There are $10^{10} \times 10,000 = 10^{14}$ links and if each link can be in one of two states—weak or strong—then each can store one bit of information. Hence the capacity is at least 10^{14} bits. Such an estimate is, of course, extremely crude. However, it is useful because it does show that, at least from an information-theoretic point of view, there is no obvious conflict between the traditional theory of the basis of memory and the experiments on information extraction by human beings.

This apparent lack of conflict is very important because it removes the one prop from under a rather curious theory of memory which has recently been much canvassed. We remarked earlier that the genetic molecule DNA is a store of information and people have often asked whether this molecule, or the related RNA, is used in the brain as a memory store. The idea is that when one learns something, it gets “written” in some way into the sequence of newly-synthesized DNA or RNA. Such a thing does not seem very likely from the point of view of modern molecular biology. Also, there is no experimental evidence for it, dubious or otherwise.

and it is in my view most improbable on many grounds.¹⁰ Note that this is not the same as saying that RNA has *nothing* to do with memory. RNA of various kinds is so ubiquitously involved in the biochemical organization of cells that it is really very likely to play some part in the process of memory storage, but most probably in its usual rôle of directing the synthesis of proteins whose amino-acid sequence is stored in coded form in the inherited DNA of the cells.

The second matter we discuss briefly is speed. Here we may sum up the probable situation by saying that a computer is very much faster than a man but it cannot handle much at a time, whilst a man is slower but may be able to handle much more at once.

As with memory, however, we can easily give a rough figure to the speed of a computer, but not any reliable figure for the speed of a human. A computer has a central processor in which it handles some 50 bits at a time. As the fastest computers take of the order of one microsecond to perform a basic operation on these, that means they can handle something of the order of 50 bits per microsecond, i.e. $5 \cdot 10^7$ bits per second. As time goes on, no doubt this figure will improve.

A man can clearly handle as much as he can be shown to extract from his environment in a second, i.e. up to about 100 bits/second. However, such an estimate ignores the very complex ability of the human brain apparently to collate simultaneously a large number of diverse memories—an ability which a present-day computer does not possess. Another approach to the question of speed is to note that whilst in a computer a few bits only are being dealt with at any one time, in a man it is almost certain that a considerable fraction of all his 10^{10} nerve cells are active in any one second. Using experimental data from microelectrode recordings,^{11,12} it is possible to obtain an approximate figure for the information content of the activity of the cells concerned of 10–100 bits per second.¹⁰ Even if many cells are relatively much less active, this still means that our information-handling ability might easily be anything up to 10^{10} – 10^{11} bits per second and, if this were so, it would mean that there is a sense in which we may actually think faster than a computer. Computers, of course, can at present easily beat us for speed at elementary arithmetic but they cannot yet compete with us at all in most of our higher modes of thought, including almost all creative mathematics. There are many possible reasons for this—one is simply that we have not learnt to program them rightly. But one may be that they are not yet fast enough!

This article is an expansion of a talk written for the British Association for the Advancement of Science meeting at Nottingham in September, 1966.

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Andrew Rawlinson, who designed the first cover for T. to T., has written the concrete poem (back of cover) on the same theme as J. S. Griffith's article on "Brains and Computers". He says, "A word is part of a language and a language is a map of the universe. This poem is a complete language and therefore a complete universe, all of whose possible combinations are contained in it".

Our mathematicians query "all", and Andrew Rawlinson is now out of range. [Ed.]

The Expanding Universe of Intercession

Iulia de Beausobre

Alongside our pursuits and achievements runs a strong current variously spoken of but best described, rather vaguely, as a sense of horror. About what it is best to be horrified at there is little agreement. And the outcome is haphazard: our horror-in-flux coils round whatever opportunely comes its way. Other people's sexual habits do nicely, whether they be loose, deviatory, or prim. And there is the bomb—its presence or absence, its universality or exclusiveness. Which should we pat ourselves on the back for, which is the superior status symbol: to have or not to have the bomb? And drugs—to be taken seriously because habit-forming, or gaily in expectation of kicks; to be mass-produced for easing unbearable pain and intractable states of depression, or banned as dulling the senses in the long run and leading to lurid vice? The unagreed list can be extended to include anything from the vanishing skirt to thalidomide babies. One thing is sure: whatever one's pet horror, the sense of horror is with us. And so, to hell—its concentration and culmination; hell, in which many of our young drug addicts are, on their own testimony, trapped.

A Christian labouring in the arduous fields of intercession must come to terms with his understanding of hell, and remember the chronological fact that Christ's involvement with it is traditionally placed after the descent from the cross and before the resurrection. With all personal torment over, a special task still remained to be done. Down and through the region of mankind's cumulative horrors he went to fetch out men and women trapped since it began to function. The aim of the Christian—for all his defects and limitations—is to advance along the trail blazed by his Master. The lonely way is hard; but as on any journey sensible organization helps. And foreknowledge can be of use even when based merely on reports, and even if they do not tally.

Intercession can be examined in many ways. What matters in the present context is its originating in the obsessive concern of one human creature for another, coupled with the concerned person's awareness of no longer being able to do anything unequivocally useful; in other words, its being rooted in a particular kind of humility where the urge to help is inseparable from clear-eyed awareness of one's inadequacy even to advise. The up-to-the-

minute relevance of intercession is affirmed by the fact that some needy ones of our time have responded to an interceder's prayerful concern with an exhilaration in extremis that buoyed them up as a wave may lift a breaking boat out of the blackest trough on to a luminous crest. The incongruence of the upsurge with the physical circumstances, unchanged inside the walls of the specific hells where these men and women were kept incommunicado, was spectacular. More significant still is the fact that some of the escapees from our 20th-century *oubliettes* had noted a certain correspondence between their expanding inner hell and the contracting outer, man-made hell they were being trapped into. Such reports could give pause even if they lacked extraneous support. But this they do not lack.

Through the Gospel runs the assumption that like the Kingdom of Heaven so also the Kingdom of Satan is within us. A startling message, misheard almost of necessity by its early audience anxious, as we always are, to adapt an uncomfortable thought to the well established concepts of the age we live in and what the society we belong to perceives and understands of the world around it. Small wonder that both Kingdoms were thrust far out—the Kingdom of God into the inaccessible blue above, the Kingdom of Satan into the equally mysterious, molten innards of the earth. But in our age they can no longer continue there. For us, both have shifted. And as the surfaced pockets of hell proliferate among us, the urge to understand, to explore them increases; while those of our contemporaries who are ignorant of, or indifferent to, the experiences suffered in deliberately contrived hells, find other incentives to revalue the matter. These are in the concepts forged by experts on outer space, our planet's geological state, and the deep of our psychology. In that deep tarries our hell. There we can learn to understand our own and each other's, as life on earth moves toward a stage of development tentatively called by a leading French anthropologist "homo post-sapiens".¹

For each of us the first descent is into his own hell; and it can hardly be avoided once a particular milestone is reached along the way of prayer. Most of us come to it in old age by when, slowly maturing, we have acquired the technique of bracing all our courage, indeed all our courages. Every level of our sensibility has at this point to contribute its own, because the milestone marks a

¹ André Leroi-Gourhand, *Le geste et la parole*, I & II.

fork-road leading through poisonous thickets of malevolence in which the many-headed lust after destruction has always lurked, but seems of late to have been unleashed. Yet beyond these perplexing thickets we acquire most decisively the certitude that Christ is everywhere. A Christian who braves the ingress into his own most abhorrent depths meets there Christ the Harrower of Hell; and learns through incontrovertible experience that however repulsive a system of caverns it be, Christ waits there to lead him out. By inference the milestone offers the greatest possible awareness of the Creator's continued, active, concrete, intimate participation in the lives of all men. And if the offer is taken up, the great divide between the functions of the Creator and the creature defines itself with fresh precision. No presumption can arise that any creature could lead another out; but the desire grows strong to avail oneself of a privilege bestowed upon us by the God-Man's presence everywhere. The desire is to understand each other's hells, exclusive until the Crucified is known to be waiting even there—in every suicide's, every murderer's, every drug-addict's, every cruelty-addict's, every alcoholic's.

No descent into another's hell could be usefully undertaken without the certainty that the one who is being accompanied will be led out when, or if, mastering dread, he decides to penetrate the tangle where daring and despair breed incentives to wholesale destruction or self-extinction, whichever is more persistently feared. But to be present, clear-eyed, as another descends, calls for courage even greater than the descent into one's own hell. Ultimately it amounts to a confrontation with indecipherable, deeply alien, utterly baffling enigmas which paralyse. Release through action can be summoned only in one's own hell. What one sees in another's is clear enough but, being patchy, remains insufficient to prompt action. The interceder can do nothing but watch and pray. Yet a compensatory adjustment supervenes. As the tormented one, braced by the proffered human support, descends deeper into his, or her, unimaginably concrete caverns of horror, a process of erosion starts up in the witness, marvellously acted upon. Grown aware that any action of his, in this alien hell, would only be destructive fumbling, he accepts to be a mere praying presence, a witness to an act of extreme human heroism responding, here and now, to an act of divine deliverance. A significant modification of his character sets in. His testimony as a presence can be put to no narrowly personal use; but is understood by him to be of value to mankind—an incalculably grander lot. Being a witness forgetful of self because totally absorbed in

following the dark convolutions of an alien anguish, wipes away one's selfishness—the murky foam on our instincts of self-preservation; and as one is pushed against the limits of one's understanding, the measure of one's limitations is starkly apparent. If many such experiences follow, the interceder's personality (and his life which is his personality in motion) oozes through a vast system of interlocking yet isolated caverns of self-torment—mankind's hell, revealed to the interceder by shafts of human comprehension that have long played in and through it. While the interceder is thus availing himself of mankind's remarkable privilege—to give moral support through understanding—the one whose anguish is being witnessed remains absorbed in himself and his egress. And yet for both people, linked by and in the situation, an iridescence—of a delicacy that eludes definition—henceforth plays into their perception of all men and their aggregate, mankind. The joint experience enriches mankind within whose body is being enacted one more solution to our perennial conflict: that between every man's independence and the interdependence of all men. As the solution unfolds, the interceder acquires a new slant on an “autonomous” personality's service to its species. Though mostly paradoxical to the rational mind, every such solution—once it has been followed through—can be grasped and pondered by others, in their turn seeking for their variant of the solution.

Considered coolly, arduous acts of intercession appear to spring from pure generosity. Yet they do not. The interceder is not exclusively prompted by another's need that has released an outflow of his affection; but in equal measure by a well-nigh insuperable urge arising in the mind of a person become aware of our being able to find ourselves only by losing ourselves. Since the Christian way leads neither to dilution of the self in universal bliss nor to the abraiding of the self to achieve a contrived common weal, the urge to find oneself soon becomes a potent desire. One's own hidden self—unlike any other and no less elusive than it is singular—becomes an object of discovery. The sum total of intercessory acts—undertaken with and through those others, freely selected—helps in the discovery while it heightens the interceder's originality. And as his originality is unveiled, every one he intercedes for is seen by him to be unique because able to find only at his hour and in his way the Kingdom of God, where he begins to learn his own particular contribution to the ultimate concert of the free.

As interceder on the arduous path you do not pray for the happiness of three-dimensional objects out there, capable of giving

and feeling pleasure while comfortably continuing to be seen by you at a distance, in perspective. You pray for lives—extraordinary trajectories, each like no other. And as you pray for one, you are drawn along its curve that you could never otherwise have found let alone followed. As many lives as you thus pray for draw you along their trajectories; while you continue along your life's course too. The resulting expansion is totally different from the penetration into alien hells. It brings exhilaration. But the two pretty well concurrent experiences (penetration into realms of cumulative alien distress and expansion along divergent alien trajectories) cause a strain so great that the re-organization of one's formal life becomes necessary.

An early check for the correctness of one's actions during the dual movement can be found in observing, in oneself, an augmenting incentive *to do*; and this, despite one's own immediate future being stamped out by the exhilarating torment of more expansion glaring ahead. A later check for the rightness of one's undertaking is in the observation of a new alertness to ease those other lives. Whenever an occasion arises—concretely, materially—to help any one of them, it is done immediately, thoroughly, as a matter of course, however destructive of one's own peace or circumstances. The more imperative the readiness, the more correct one's actions—the price of intercession is being paid, as it must be sooner or later in one way or another, and there is nothing to fuss about. In fact if the urge to help is absent, the course is likely to be wrong. More often than not, being harrowed even unto hell is a by-product of our prayers for each other, and is followed by a close interlocking of loss and gain. If in one's own hell squeamishness is overcome, in those of others every trace of sentimentality withers away. The asperity of the path increases. And should the harrowing be resented or feared, exacting prayers of intercession had better be eschewed. But the ultimate "why", the "whatever for" of the accumulations of alien anguish can be sought.

A pointer to the answer may be found in our stupendous generic aim traditionally termed the Body of the Resurrection. On this goal of our lives—as they stand recorded in ancient chronicles and the daily press—the Christian tradition is emphatic but reticent. Still, this we do know: based on our actual lives, it is to serve a purpose of which a precondition is our readiness to lose this life while we sensibly continue our daily acts of self-preservation. To persevere in striking the balance generates anguish. But the goal of the exercise can be a corrective to the trend followed by

some branches of present-day science. Pervasive knowledge—exact at least in aspiration—is invading for us miles of space and centuries of time. The impact on many is distracting. An occasional dose of centripetality could well steady them by counteracting the centrifugal tendency. And to be aware, however dimly, of one's Body of the Resurrection might be a good starting point though, for the moment, any dwelling upon it must remain unrecorded, for lack of a vocabulary. No doubt, as the need grows and spreads, a vocabulary will emerge and, next, establish itself.

The painless reciting of intercessions actually practised in many parishes may seem at first glance to have nothing in common with the arduous way. Indeed it may appear so simple that the question why most Christians are encouraged to pray for others can puzzle. The Creator of all cannot need a reminder that tucked away here or there in his universe is one more creature needing prompt attention. Yet to dismiss the exercise as a salutary mitigation of our horrified misunderstanding of each other would be inadequate. Perhaps the answer is most easily traced through the joy which some know when piling up lists of those they daily pray for—no self-indulgence. In their homes you can inhale the spirit of unabated loving concern for men, women and children known, or thought, to be in peril. Their spontaneous but sustained efforts evoke, faintly yet clearly, the spontaneous and sustained efforts of ancient Christian communities who knew themselves and all their members to be in hourly danger—of death, of course, but more gravely of committing deeds of disloyalty and betrayal that blemish or even cripple a life. In those distant days prayers of affectionate concern were rooted in the recent revelation that mankind was a tangible unity—touched, almost fingered, in prayers of intercession, personal or corporate. Our contemporaries who, with joyous spontaneity, continue the old tradition, know the flavour of a fruit rooted in the early days. No other exercise offers its practitioners the like. And through prayers for the dead the unmistakable flavour spreads beyond the narrow circle of contemporaries. The flavour of integration with mankind by means of prayers for a sorely harassed section of it is unmistakable; and pervasive. Only the unconceived cannot thus be prayed for. There can be no adequate prayers for a trajectory unimaginable except in terms of riotous fiction or—in other words—for a life of which one can only know that, since human, it must be given up if its body is to attain the state called resurrection.

An example of the human support which furthers the re-emergence of a man in the resurrected state is enacted when a priest

of the Byzantine Rite listens to a penitent come for confession. As they stand—at right angle to each other, out of earshot but more often than not seen by other parishioners significantly present—priest and penitent face a lectern on which lies the gospel and a cross or an ikon of Christ. The priest invites the penitent to seek healing through unburdening his mind and heart to Christ while the priest stands by, as it were at the exit out of gloom into joy (out of contrition into communion). He is an organ of hearing, the ear of mankind to whom the sin and pardon of every one of its members matters. The Eastern Churches stress the value of his presence. He has a place in furthering the ultimate concert. Though the penitent confesses to Christ and is forgiven by him, the priest by his presence affirms the fact to mankind, and makes the intercourse itself intelligible to the penitent. It is not the priest who forgives. But he does transmit Christ's forgiveness, in easy terms, suited to a fellow Christian hard of hearing, stuck in the corpse to be. Of equal antiquity is an inconspicuous but helpful stream of thought still alive in the Eastern Church though seldom stressed. It affirms that there can be no eternity other than God. The temporal world may well be the kingdom of its prince; but in eternity (which is not thought of as time extended beyond our capacity of calculation) he—as Satan—has no portion, any more than he has in love. A satanic eternity is, in this view, as self-contradictory a term as satanic love. Both are meaningless concepts. But the lurking temptation to accept them as valid points to the last possible expansion in a man's universe of intercession. Ultimately not one wrong-doer can remain unincorporated in love and eternity—in other words outside Christ's act of redemption which was carried through in time. None can be left to stagnate after time has folded up. And men's grateful response to angelic acts of guardianship can be (under conditions still to emerge) intercession for those angels who—far from being beneficent guardians—fell into the condition of malevolent tempters. Such acts of intercession, it is claimed, may ultimately aid mankind's great sprint away from multifarious stagnations into the kingdom of activities that are our true goal, rooted though they are in our actual condition and our understanding of it. In the multiplicity of mansions can be, it would seem, some new activity even for angels who had misused their moment of freedom, their moment of choice. And if our task is to understand—as it would seem to be—mankind and its complex environment, the more arduous forms of intercession, which superbly stretch our rudimentary gifts of understanding, will have played a prominent part. What follows, as

mankind is speeded on its way, is an acquired ability to sit loose to one's life without ceasing to care for every living thing, including one's body. But accounts of the road must stop where faith in the goal entirely takes over.

Comments

Experimental Work in E.S.P.

It was a good idea to have this dialogue between John and Chris making a preliminary exploration of some of the problems of the interactions of parapsychology and religion. I welcome too John's report of his attempt to interest the author of *Honest to God* in paranormal phenomena (unfortunately misprinted as 'normal phenomena'). Failure to appreciate the significance of the paranormal seems to be one of the blind spots in the *Honest to God* approach to religion.

While there is much of what he says that I agree with, I deplore John's bias against the experimental approach to parapsychology. I do not think that the question of whether we ought to do experiments (e.g. in card-guessing) or study spontaneous phenomena with the help of mediums is one on which we should take sides. Why not both? The physicists of the eighteenth century did not waste time in discussion of whether the right way to solve the problems of electrostatics was to look at thunderstorms or to make sparks in the laboratory with Leyden jars. They did both, and experiments with Leyden jars enabled them to find out some things they would never have discovered merely by observing thunderstorms.

Chris asks the important question as to what discoverable rules paranormal events follow. One purpose of doing experiments is to provide answers to this question. With this aim in mind, the experimenters had the job of devising a method that produced positive results which could be expressed quantitatively and of which one could rigidly assess the likelihood that they might have happened by chance. To fulfil these conditions, card-guessing techniques were adopted.

A good deal can be said against the card-guessing technique. Much has been said both by its users and by those who are arm-chair critics of the method. The objections of these two groups are not always the same, but it would generally be agreed that card-guessing is a boring activity both for experimenter and for experimental subject. It would be fine if we could devise a test more interesting than card-guessing which succeeded as well. Many people have tried to do that. In the last *S.P.R. Journal*, I described a new *Picture Construction Test* of ESP which I hoped would prove a more interesting and creative task than card-guessing. I think I succeeded in doing that, but, so far, the new test has shown no

signs of producing positive results. So it is not a serious rival to the card-guessing experiments which have, at best, shown startling rates of success.

One may agree with John's complaint that card-guessing experiments are mechanical without agreeing that this makes them unable to reveal ESP. It is obviously a reason for not expecting them to succeed but not for closing one's eyes to the fact that, contrary to reasonable expectation, they have succeeded in revealing ESP. No other method has produced experimental results as good as those obtained in the early days of experimenting at Duke University, as Soal's experiments with Shackleton and with Mrs. Stewart, and as those being carried out now by Ryzl in Czechoslovakia. No other method has provided as many answers to questions as to the discoverable rules that are followed by ESP.

John's memory is faulty when he reports that Eileen Garrett proved an absolute duffer at card-guessing experiments with both Rhine and Soal. Her first card-guessing experiments were at Rhine's laboratory in 1934. She then succeeded brilliantly under both telepathy and clairvoyance conditions. Details are to be found in *Modern Experiments in Telepathy*, Soal and Bateman, pp. 107, 108. On a visit to Duke University in the following year, however, and to Soal at London in 1938, she did not score better than would be expected by chance. She said that she was 'fed up' with card-guessing, but she had shown remarkable success before she was fed up.

This is an example of a commonly found tendency for subjects (and experimenters) to show a falling off in ESP performance as experimenting goes on. This 'chronological decline' seems to be one of the discoverable rules of ESP but it is a nuisance to the research worker who would like to have a reliable way of circumventing it. It may be a characteristic inherent in recorded psi activity; it may only be a peculiarity of card-guessing experiments. The latter possibility gives an added motive to the search for alternative methods of experimenting.

Several experimenters, including Whately Carington, have used the reproduction of drawings as an experimental method. This has the advantage of being a more interesting task than card-guessing, but it has serious disadvantages. I do not know why John supposes that Whately Carington's drawing experiments were much more successful than the card-guessing experiments. The actual figures for Whately Carington's results can be found in my book *Experimental Psychical Research*, p. 31. These figures show that, although Carington's results were statistically significant, their level of success

was not high, far lower than that of the best card-guessing experiments. Several later experimenters have repeated these experiments with, on the whole, disappointing results. This way of experimenting has the further disadvantage that it is difficult to find accurate and error-proof methods of assessing degree of success.

Are then Vasiliev's experiments on hypnotism without sensory contact the ideal form for ESP experiments in the future? I think not. Certainly Vasiliev has important achievements to his credit. He has shown that this is a repeatable experiment which can be demonstrated before a large and critical audience. He has also shown that a thick metal screen between experimenter and subject does not cut out the telepathic effect. But the method is too inflexible to be easily adapted to answering questions about the rules followed by ESP; it does not seem to be adapted to experimenting on clairvoyance or on precognition. When Chris asks why in the population of Great Britain a few reliable subjects cannot be found for a repetition of Vasiliev's experiments, he seems to assume that attempts have been made to repeat these experiments but that they have failed through lack of reliable subjects. So far as I know, this is not case. I have heard of only one claim to have repeated Vasiliev's experiments and this was reported to have been successful.

There would seem to be several reasons for their non-repetition here. There are few research bodies with the necessary resources and these have projects of their own. Experimenters may also have moral scruples about carrying out experiments which involve hypnotising subjects until their nervous systems are so completely under the control of the hypnotiser that they can be hypnotised from a distance without their knowledge or consent. Perhaps such scruples are unreasonable; I would not myself take part in such an experiment either as experimenter or as subject.

Chris asks also why Schmeidler's sheep-goat experiment, if it is significant, has not been repeated. It has, in fact, been repeated many times; its finding that score in ESP experiments is affected by the subject's opinion on the possibility of ESP is one of the well established rules of how ESP works. We may notice incidentally that, like most of the other known rules, it was established by the use of card-guessing experiments. Card-guessing experiments seem still to be the best research tool for the experimental study of ESP, but they are not perfect. We must go on looking for something better.

On Chris's statement that Parapsychology is dead because young people don't care a damn about the subject, my own experience confirms that of John. I have recently returned from a visit to

Australia where I went to a number of universities with an official programme of lecturing on normal psychology. In most cases, I have been invited by student societies to address them and always the topic of their choice has been 'Parapsychology' which has drawn a packed audience. If the life or death of a subject is determined by the interest of the young, Parapsychology seems to be very much alive.

ROBERT THOULESS.

2 Leys Road,
Cambridge.

The problem of unfamiliarity in the study of religions.

"My interest in this particular problem was stimulated by Professor Ninian Smart's article entitled, 'What is Comparative Religion'.¹ I trust that I have understood him correctly, because I wish to ask a question on an issue which seems to me to constitute a stubborn difficulty for the student of religions.

Professor Smart makes a distinction between the History of Religions which may be restricted to the study of a single religious history, and the Comparative Study of Religion which should attempt to make sense of similarities and differences between various religious histories. As the article progresses it becomes clear that the author desires to defend the notion of the organic nature of individual religions and also to posit the idea of a correspondence of axes through which some of the diverse doctrines and various beliefs are expressed and experienced. He points to the doctrine of the Creator God which is especially characteristic of the three Semitic religions, but adds that because of its separate and distinctive correlation with other beliefs in these religions this particular doctrine does not have the same significance in all three faiths. Professor Smart asserts that every faith has elements which are not shared by other faiths. But he believes that the organic character of individual religions does not invalidate the drawing of authentic comparisons, for example, belief in grace (Ramanuja and Paul) and a similarity in mystical experience (the Sufis and some Christian mystics). The analogy is offered of American and Rugby Football, which are separate in their inner structures so that the term 'goal' has a distinctive significance in each, but exhibit similarities so that comparisons can be drawn.

¹ *Theoria to Theory*, Vol. 1, Jan. 1967, pp. 139-45.

The proximity of games to rituals, so that a transposition is possible, is demonstrated by C. Lévi-Strauss who cites the example of the Gahuku-Gama of New Guinea 'who have learnt football but who will play, several days running, as many matches as are necessary for both sides to reach the same score'.² A detached observer with an expert knowledge of the football coherence might be excused for thinking that what was in progress was merely a series of such games, but he would be crucially wrong. The orientation is not disjunctive, the division of participants into winners and losers; the ritual-game thrusts towards parity and the achievement of victory by all. Here the existence of similarities tends to obstruct right understanding by obscuring the fact that a foreign coherence has been made subservient to the indigenous culture with a resultant change in the meaning of the former. Unfamiliarity masquerades as familiarity and similarity is equated with identity. This temptation stalks the historian, for religions are prone to borrow from each other, but the borrowed elements become an integral part of the native ideology. It is in the religious context as a whole that the key to understanding lies. One needs to trace the inner structure of a religion, to understand the 'rules' which are followed and what is the significance of following them, in order to discover the integral intelligibility without which a religion could not exist. This latter fact is strikingly apparent in the West today when the traditional Christian coherence is undergoing a thorough refashioning because of the challenge of the secularization of concepts. In this example we understand that the inner intelligibility has a history, it does not remain static, but it is a *history*; however great the discontinuity which may appear in the growth of a religion, a measure of continuity remains, so that even a major dislocation is in part the *result* of previous development. One is therefore driven back to considering the nature and orientation of a religion's inner structure.

It follows from the argument of the last paragraph that the concepts which constitute a part, and a crucial part, of the explanation offered by the religious investigator, his attempt to make sense of that which he studies and to convey that sense to others, are in the first instance integral to the field of study. We may think of a student of human behaviour making sense of a man's decision to turn his back on position and prestige in order to devote his life to the alleviation of suffering in a remote corner of the world in terms of religious obedience. In the process of understanding and explaining there will be other concepts at work, possibly the idea of a child's

² *The Savage Mind* (E. T. *La Pensée Sauvage*), London, Weidenfeld & Nicolson, 1966, pp. 30f. Cf. pp. 32f.

obedience to his parents, and these other concepts will be subordinate to the central concept of religious obedience. But unlike the ancillary concepts which may wholly belong to the investigator's mental equipment, the central concept originally inhered in the behaviour which is being studied and together with other related concepts structured the inner integrity. If the student's use of the concept of obedience is to capture the essence of the man's behaviour, he must first learn this concept and its place in the inner coherence and feel the force of the concept upon himself.

One of the results of attempting to understand religions in terms of their internal criteria is that considerable doubt is cast upon the validity of the generic use of apparently non-problematic religious terms. The terms 'monotheism', 'theism', 'atheism', quickly assume a complex character when related to specific contexts. It also appears that some of the dissimilarities between religions extend beyond the objective aspect of articulated religious beliefs, their significance as expressions of inner actuality, to the bedrock of subjective religious experience. In the main the Biblical images were drawn from personal and social life and are not easily correlated with the notion of a collective unconscious. This is surprising in view of the fact that the surrounding ancient 'polytheisms', which contributed to the growth of Biblical Religion, are in some instances illuminated by Jung's archetypes.

But it is one thing to stress the importance of understanding religions from within and to see some of the possible consequences, and another to implement this approach with confidence. Professor Smart speaks of suspending doctrinal judgment, of sympathetically and imaginatively entering religious worlds, and makes use of the notion of make-believe. I think that in speaking earlier of learning religious concepts and feeling their impact, I was saying something akin to Professor Smart's position. He distinguishes between make-believing that we are on the moon when we know that we are not, and the idea of make-believe in the study of religions where there need not be a conflict with what is known. I should like to extend the lunar example, because it can serve to carry the argument forward.

Imagining oneself to be on the moon is nowadays, at least for cosmonauts, a highly scientific matter with well-attested concepts like that of the moon's weaker gravitational pull than the earth's to bridge the gap between the imagining and the reality. This is because the imagining is related to a physical world, now within the range of detailed empirical investigation, so that one's thinking about the moon can be informed by the relevant concepts and sub-

jected to controlled external criteria. Entering a religious world imaginatively involves learning the concepts which are integral to that particular world, a task which increases in difficulty in proportion to the recognized unfamiliarity of the concepts of other men. This problem is acute in the study of Ancient Religions and, with different ramifications, the so-called primitive cultures.

We may be able to refine the distinction between the two imaginings by thinking of an inexperienced probationer cosmonaut whose relationship with his qualified colleagues, which would include learning the relevant concepts and the significance of their inter-relationship, would be analogous to the relationship which I am advocating between the student of religions and his subject-matter.⁸ But since the relevant criteria of understanding for the study of religions are internal, one cannot know in advance what they are and there would seem to be a real danger of imagining that something authentic is happening when in fact nothing is taking place except the imagining.

A similar situation is discernible in the current debate between Christian philosophers and sceptics. The Christian may say, 'You have misunderstood Christianity, and therefore you find Christian language meaningless or outmoded'. In order to sharpen the similarity we may rephrase the charge thus, 'You imagine that you have understood Christianity, but there is no authentic content to your imagining so that your imagined Christianity has no reality outside your imagining'. The Christian speaks from within his coherence, and the onus of understanding lies on the sceptic just as it lies on those of us who wish to understand other religions. The debate is concerned with the validity of belief as well as right understanding so that the two situations are admittedly not identical. But they are sufficiently alike to reinforce the view that the question on the proper steps one should take to surmount the problem of unfamiliarity is pertinent.

This question can perhaps be couched in more precise terms by briefly exploring a tentative answer. There would seem to be three main steps that need to be taken. There is the step of discriminating between the structures of various religious coherences, and here one is heavily dependent upon the work of specialists in matters of translation of texts and presentation of data. When one has seen the inner symmetry of a particular coherence, there is the further step of attempting to determine which concepts already in our possession or available in our Western culture and scholarship are

⁸ This analogy was suggested to me by my reading P. Winch, *The Idea of a Social Science*, London, Routledge & Kegan Paul, 1958, pp. 87f.

most likely to lead us from notional to real thinking and understanding, if I may be permitted to adapt Newman's celebrated distinction. A process of impersonalization seems to be involved here, a withdrawing from our concepts so that we may take a cold critical look at them and decide which are capable of propelling us imaginatively towards the religious world that we seek to enter. The final step, and the most difficult it seems to me, is leaving the launching-pad!

Let us think of a twentieth-century Western scholar who is studying an Ancient Religion, for example, Canaanite Religion on the basis of the Ugaritic texts from the second millenium B.C. He is confronted by diverse myths, gods and sacral forces, a conspicuously unfamiliar complex and his initial attempt to make sense of the ancient data may consist of the familiar distinction between the natural and the supernatural, 'this side' and 'the other side'. But on further reflection he discovers that this kind of terminology is unhelpful for his purpose. In the ancient context there is one side only, the gods are immanent in the life of Nature and the world pulsates with a personal energy. He ironically finds that such a dichotomy with its overtones of a fragmented world-view makes better sense of the modern than the ancient world. But this means that he has begun to find a mental stance external to his own culture, and what he now requires is a concept or group of related concepts that will orientate his thinking towards the ancient coherence. There still survives in rural societies, despite technological inroads, the concept of the earth as a living entity to be respected and cherished. I do not mean that there is necessarily an essential similarity here, but that the rural concept can perhaps perform an ancillary rôle in providing impetus to the scholar's thinking and understanding and enabling him to identify himself more closely with his subject-matter—an immensely complicated process which is neatly expressed by the German *Einfühlung*. The question therefore contracts to, how does one exercise control over these ancillary concepts? Where is the touchstone?"

ISLWYN BLYTHIN.

University College of North Wales,
Bangor.

Letters

“Whether ‘concrete poetry’ is poetry or not depends on what one means by poetry. There is an extensive literature on this subject. Horace had one view, Pope another, Wordsworth and Coleridge argued interminably but ended in disagreement; in our own day we have had Yeats, T. S. Eliot, Ezra Pound, Auden; and now dsh who contributed a closely-reasoned article on concrete poetry to *Theoria to Theory* No. 1.

But, does it matter, except to scholars and critics, what others think? One has to know the best that has been thought and done in one’s chosen field but, in the long run, one has to make up one’s own mind. In this sense, poetry is, for me, whatever awakes in me a response of the deepest part of myself; or else it is whatever I write from that deepest part of myself. What I write may be bad from the point of view of technique or expression. But it is still poetry provided it issues from the personal depths; and doubly so if it finds an echo in the depths of some other being.

The concrete poem on the cover of *Theoria to Theory* No. 1 interested me at first sight. I liked the look of it. I had no idea what it meant; what it was about; but I felt sure it was worth taking trouble over. I *wanted* to know. So I was eager to read the ‘Explanation of the cover’ on pages 119–121 and was delighted with the invitation to try and write a poem of my own to the same schema. I had a quick look at *Poetry Theory and Poetry Theoria* by dsh (pages 6–9) but was in too much of a hurry to struggle with its awkward presentation. It was only later, after writing my own poem, that I returned to this piece; only then could I appreciate its truth and value it properly.

For me, the ‘Explanation of the cover’ wasn’t much help. Perhaps I couldn’t understand it. But, for practical purposes, the only thing to do was to set it aside and go straight to the poem itself.

What an extraordinary collection of words! Why *those* words and not others? What was the connection between them? *MOUNTAIN cell?* Ah! *of course*; Mount Athos. *DESERT robot?* This must be the Desert Fathers and the reproach so often made that those who give up their own wills become ‘Zombies’. *CRYSTAL bones?* Why, this is divination by use of the crystal and, in Africa and other places, by witch doctors using bones.

Having got so far, I began to make a similar list of connected ideas—‘associations’—for myself. It was an exciting job; I raced ahead and felt I was doing fine. But caution intervened. Surely

it couldn't possibly be as easy as this? Nothing worthwhile is ever achieved without effort. Where was the effort in this agreeable exercise? And, for that matter, where was the 'concrete'? Why 'concrete' poetry? Where did the 'concrete' come in?

Concrete has two meanings relevant in this context. *Concrete* means something material—an object or thing as contrasted with an idea (*abstract*). It also has the meaning more easily seen in the word *concretion*—'coalescence of separate particles of matter in one body'. To myself I said: 'A drawing together of disparate ideas carried on names of objects'.

The poem on the cover of No. 1 had *MOUNTAIN* where I had *GRACIOUS*; *DESERT* where I had *DIVINE*. I must start again. And did. And made many fresh starts—I used up countless sheets of paper—and *all* of them had to be scrapped when I thought of something else which was this :

A sonnet has a specific number of lines; traditional poetry has metre even if not rhyme. Where, in this concrete poem, is the 'form' as distinct from the content? *Theoria to Theory* bears witness to minds accustomed to strict discipline. Would the Epiphany Philosophers have started No. 1 with a poem conspicuous for lack of order?

I couldn't believe they had done any such thing. So I looked again at what was before me, at the poem itself; and I took it to pieces, syllable by syllable; letter by letter. Like this :

prayer	(6 letters :	2 syllables written :	1 syllable spoken)
growing	(7 letters :	2 syllables	2 syllables)
flowing	(7 " "	2 " "	2 " ")
secret	(6 " "	2 " "	2 " ")
clear	(5 " "	1 syllable	2 " ")
soft	(4 " "	1 " "	1 syllable)
	<hr/>	<hr/>	<hr/>
	35	10	10
	(5 × 7)	<hr/>	<hr/>

I saw the connections between the words—pr-gr-fl, for example—the linguistic connections; I saw, and despaired. I also saw the hidden significance—the numbers—and I rejoiced. At this point I felt the heights and depths of emotional response, both at the same time. The poem was 'concrete' all right. It was a 'koan'.

With these hints, readers who are interested can complete the

necessary work for themselves. The poem is impeccably constructed and can stand the closest analysis one can give it.

Not all concrete poems are of this kind. Many leave me unmoved and I do suspect that some are meretricious—cheap mock-ups done by people who think them an easy way to win recognition from a gullible and ignorant public. But a good example, such as this one by Andrew Rawlinson, serves as a starting point for the *reader's* imagination. Or one could say that such a poem is like an electric light switch. Press it and *your* interior lights up. What you *see*, of course, depends on you.”

SALLY COOLE

Flat 1A,
49 Hallam Street,
W.1.

A letter from one T. to T. subscriber to another

Dear Tom,

As you know, I greeted the appearance of the Epiphany Philosophers' journal with enthusiasm. After the second number, I mentioned the need, as I saw it, that such an effort should keep contact with the ecclesiological tradition; and you said that there seemed to be a better response from the scientific than from the religious. This is somewhat disappointing, but not surprising. The subject looks, and really is, difficult: those practising Christians who are trying to make their faith articulate and communicable are already committed to methods that give them enough to do without joining in an enterprise that may make great demands without promising any early or tangible results.

The scientists are in a very different position, members of a faculty that is “on top of the world”. At the same time, they have infinite intellectual curiosity; so they are apt to be attracted to any enquiry outside the bounds of their own discipline which they have the least reason to suspect may lead to “something more” than orthodox knowledge can bestow—to, e.g., some control over ‘paranormal’ phenomena. We often see them taking real pains to verify current claims to discoveries of this kind, which they immediately seek to do by the statistical or other methods which belong to their own methodology (and which, by the way, are really useless for this purpose even in principle).

However, not many scientific workers actuated by these motives are likely to be attracted to such work on fundamental presuppositions as *Theoria to Theory* envisages. Collaborators of value will be attracted by more significant considerations.

There are growing dissatisfactions among the most conscientious scientists which seem to be, broadly, of two kinds.

First: on a widely prescient view of their social function, they see that the most brilliant innovations—in, e.g., economics, communication and medicine—which their work makes possible, also produce new difficulties often more intractable than those they overcome. And, as these have to be tackled, if at all, by research and technics of the same nature, an ever-growing proportion of the population must be trained to be scientific, whether that is their true vocation or not. Both developments proceed at accelerating speeds: so the logical prospect is that of a society wilting under ever-accumulating problems, and a levelling-down of the faculty on which it relies to cope with them. This grim prospect will not make a true scientist disbelieve in Science—which is not, in itself, responsible for the uses that organized society puts it to. But you have only to contrast this picture with the golden expectations of the future age of Science which seemed so plausible say sixty years ago, to see that the conscientious scientist may well feel that something is going wrong: he may now envisage, with weakened prejudice, the possibility that there is something in the traditional wisdom which he ought to look into.

Secondly: in the domain of pure science itself there are unexpected troubles which may tempt a philosophic scientist to look over the party-wall, so to speak, into the monastery garden. His own imposing edifice of doctrine is showing cracks in the foundations. In these matters I speak as a fool. But the news that leaks down from laboratory level indicates something like a crisis in micro- and macro-physics. Anyway, it is clear that the rational superstructure of Science is getting as top-heavy as the tower of Babel, and those of its votaries who still cherish the myth of unending progress have to try to keep up its prestige in the realm of interplanetary space, entertaining fantasies of an exploitation of the resources of the moon and the planets! At the same time, the extension of scientism into psycho-therapeutics has produced a clinical theory and practice and a voluminous literature, an analysis of mental pathology which, when assimilated by the prevailing ideology as of course it mostly is, tends to a further devaluation of the higher faculties of man, reducing them to the status of biological forces diverted from their natural purposes, and nothing more.

Thus, the scientific “image” or “model” of universe, which attained its maximum certainty and solidarity about the time you and I were in our teens, has ever since then been disintegrating. To the conscientious scientist, this change in the world of thought must surely be unnerving: “progress” along these lines looks too much like the path to confusion.

That is enough about the charms that *Theoria* may have in the eyes of the religious and the scientific respectively. What about those who are both at once?

For there is a considerable number of scientists who are practising Christians, as we all know. I will quote an observation of René Guénon on this point:

“... a scientist, in the modern sense of the word, even if he does not profess materialism, will be influenced by it to the extent that all his special training is oriented in that direction; and even if, as sometimes happens, this scientist believes himself to be not without the religious spirit, he will find the means to separate his religion from his scientific activity so completely that his work will in no way be distinguishable from that of the most overt materialist, and so he will play just as important a part as the latter in the ‘progressive’ building up of a science as exclusively quantitative and materialistic as it is possible to imagine. In this sort of way does anti-traditional action succeed in using to its own profit even those who ought to be its adversaries, and who might be so if the deviation of the modern mentality had not so shaped beings that they are full of contradictions yet incapable even of becoming aware of the fact . . .”*

Some scientists in this position, however, can hardly be so unaware of the contradiction implied by it. These ought to be likely recruits to the theorian project. Moreover, I wonder whether quite a lot of intelligent Christians, who are fairly well instructed about the evils of materialism, may not see (as Guénon does) that it constitutes a sort of barrier against a worse development. They may even:

Keep a hold on nurse
For fear of meeting something worse.

For the rational positivism that goes with Science constitutes a kind of barrier against the sub-rational. When this crumbles, we know what gets in through the cracks.

* From *The Reign of Quantity* (Luzac & Co. London, 1953).

There is a sporadic growth of more or less occult sodalities, schools of wisdom, professing a knowledge higher than the scientific, taught by individuals whose attitudes are as superior and patronizing towards either religious or scientific orthodoxy as they are hostile to one another. They usually claim some continuity with ancient spiritual or initiatic traditions, with oriental religions, for instance. These movements exist at almost all levels of moral and mental respectability. It would be wrong to deny that some of them render genuine service to the psycho-spiritual development of certain individuals, for in no few cases their doctrines reflect authentic religious insights. In other cases the particular traditions they quote are edited, misunderstood and corrupted to their own purposes. I am lumping together into one generalization a whole host of spontaneous psycho-spiritual efforts, ranging from simple spook-fancying at one end to highly intelligent gnosticisms and genuinely zealous sects at the other, two or three elements in which I have had personal reasons to respect. I do so only to make two points: (*a*) that in this domain the best efforts are almost inevitably short-lived and fissiparous; and (*b*) the rest constitute a psychic undergrowth which can certainly harbour—unconsciously and even consciously—those dark forces sometimes called “the Adversary”.

The former (*a*) can do nothing to arrest the general trend towards cultural disintegration: the latter (*b*) do much to accelerate it. Against this trend, scientific rationalism has some degree of retarding or consolidating influence, for so far as it really is rational, is a true function of the intellect. But it would be a mistake to try to fortify it as barrier to occult spiritisms, for, combined as it is with the myth of progress, which discredits all tradition; this is precisely what makes the modern mind either ignore the Church as negligible, or translate her teaching into rationalistic terms, which renders it incredible.

And since religion remains, in spite of everything, a permanent human *need*, the more the scene is dominated by rationalistic ideology and the Church is discredited, the more people are attracted to what the old sergeant, on church parade, used to call the “funny religions”. No, scientism is not really a barrier to heretical spiritualities; it is indirectly an incentive to their multiplication.

One conclusion I would draw from this is, the futility of a religious apologetics that tries to attract the modern mind by sacrificing the supernatural.

All this implies no irreverence toward scientific knowledge; it is the creation of a faculty of the intellect; and intellectual

consciousness is what is “naturally supernatural” in man. When I alluded to the practical reason as the “lower” intellectual faculty, I should rather have said it is the “earthward” orientation of the intellect. The earthward and heavenward directions of the intellectual energy should normally be in balanced alternation. Excessive persistence in the earthward direction, reasoning from particulars, lower the centre of gravity of the mind, so to speak. It can sink to a level at which the point of contact with its superconscious essence (which is upon what I take to be Miss Masterman’s “apophatic boundary”) becomes dim, and finally invisible. Then God is dead, as Nietzsche put it, and as some of our newest theologians say too, though they leave out his remark that this is the case of “the ugliest man”.

From a religious point of view, this is a consequence of the “fall” of man that is variously depicted in practically all the religious traditions. Seen in that perspective the present obsession by rational empiricism is only a special development of the same human tendency. But it is of apocalyptic importance. I used to think that the illumination of Science grew from something in the Judaeo-Christian tradition about Nature; an idea that I rejected later. But further reading in the history of the period puts the question to me in a different light. The Christian mysticism of Germany seems clearly to have been a powerful influence, particularly through Cusanus, on the development of thought in the Italian Renaissance, at its apogee. This influence spiritualized the already nascent individualism in such a way as to impart a tremendous impetus to the revolution in both art and science, which it presented as no longer opposed, but cognate and co-operative ways of understanding Nature. That is how Leonardo thought of them—Galileo, too.

So perhaps Christianity did make a contribution to Science which was essential, besides that of giving it an atmosphere it could grow in. But at the end of the story, when Science becomes Power, the atmosphere *it* generates is morbid to religion and to much else of value; and Science, of itself, can generate no values or ambitions except for its own increase.

The fact is obscured, because all existing cultures still have their nourishing roots: still more because the birth of Science was the greatest liberation of the human spirit and its christening-gift was Humanism—a substitute for Christianity but no less an incentive to good works—using the new knowledge to lengthen our lives, multiply our numbers, win riches beyond the dreams of avarice; while all this and more are promised to every nation that will undergo its disciplines. The prospect looks very brilliant. But there are

counter-indications, as you know: spoliation of the ecological environment of civilization, and unexpected effects upon its mentality, for which we can as yet prescribe little but more of the same medicine. Religion used to recommend very different cures, but as its clientèle dwindles so does its supply of registered doctors.

People cannot lose the desire to study and to teach religious knowledge—which is the greatest privilege, since it is the highest knowledge—unless there is a loss of belief in, which means a loss of experience of, the Reality to which it refers. There must be, in the religious community too, a lack of faith that its disciplines lead infallibly towards the highest experience of Reality. As Tagore said: “Our existence is meaningless if we never can expect to realize the highest perfection that there is. If we have an aim and yet can never reach it, it is no aim at all”.

On the other hand, Science itself, though its concerns are those only of particular aspects of reality, has difficulties which bring its highest practitioners to problems bordering upon that of Reality itself. To solve these they would have to break through (in Miss Masterman’s phrase) the “apophatic barrier”. Scientists have lately become aware, if unwillingly, of the existence of this limitation.

Religious contemplatives say that this boundary has been breached many times. First of all, by the Avatar who was the Incarnation, and therefore Revelation, of Reality. But also by those who, following the tradition he founded, attain to authentic and more or less vivid glimpses of its truth. Without an original Revelation no religion can exist, nor can it survive for long without continuing revelatory experiences.

While religion is thus dependent upon supernatural experience, the converse is almost as true; the experiences occur in or in relation to traditions that belong to the great Revelation: they are integral with it. What of revelatory experiences *extra ecclesiam*? The Spirit blows whither it will: but is not their independence of the traditions more apparent than real? Not even the great Avatars appeared wholly outside of the immemorial tradition: behind Abraham stands the eternal priesthood of Melchizedech.

According to our own Christian tradition, the world Saviour has “other sheep that are not of this fold”. There are the different great traditions corresponding to the great racial civilizations. There must be, somehow, what Schuon calls the “Transcendental Unity of Religions” whether or not this can ever be explicit. But of a *religio perennis* we can really speak only by analogy; for a *religion* means what has been given to and developed in one of the

primordially distinct and separate cultures of mankind—one in transcendent origin though they must be. Some supernatural truths expressed in one of these traditions are transparent to minds formed by faith in another tradition; other truths are difficult to translate from one into another. Nevertheless, there have always been some interchanges of essential insights between the great religious traditions; there are so still, and will surely be more in the age we have now entered upon. I would venture to say, however, that what is effectual in this cross-fertilization between different traditions can only be done at high intellectual level by individuals grounded in one tradition—not by uprooted and vagrant aspirants of the sort that has done so much to confuse issues.

In relation to what I have said; there are several points of interest in Miss Masterman's articles (which I enjoy enormously), for instance, she writes :

“Once one has immersed oneself, so far, in thinking into the foundations of science, it is wrong—as I hold—to go back to the earlier, more pictorial symbolism . . .”

Which is surely true for purely scientific thinking. It would however be just as wrong for religious thinking to try to “go forward” from the essential symbolical forms which are, in a measure, common to the great traditions. I don't think her third article (not yet read) will alter my opinion that there is an incompatibility here, which I can't try to elucidate now. Some, though not all I believe about this is in Ernst Cassirer's *Language and Myth* (a short essay giving the gist of his *Philosophy of Symbolic Forms*).

Near the end of her second article, Miss Masterman reduces the “ways” of coming to any apprehension at all of the divine, to two: *either* koans (in fact she extends this to mean some traditional imagery, for she includes ikons) or else, fundamental scientific thinking—of a kind not yet achieved but, she thinks, achievable; she says:

“All the forms of thinking in between have dropped out; assertion of particular “revealed truths” because of comparative religious objection; . . . pure metaphysics; . . . and philosophical theology . . .”

But there are comparative religious *affirmations* as well as objections. See Mr. Ninian Smart's essay in the same number, and I think I go further than he does. Revealed truths are necessarily transmitted in traditional symbologies appropriate to the great human collectivities in which they are developed, but the “images” present indubitable correspondence in essential conceptions, such

as those of the “origin”, the “centre”, and the “end”. (For these essential, universal conceptions, see the writings of Mircea Eliade, René Guénon, Coomaraswamy *et al.*) If there were not identities—more than just correspondences—between the great religious traditions, both on the theoretical and methodological planes, the cross-fertilizations I have mentioned could not occur, nor could their insights be sometimes of such value to individuals. (I think I know just enough about Zen to like Miss Masterman’s account of koans and believe her experience to be authentic). Not that there could be “hybridization” of the great religious growths from Revelation that ramify down into the vastly different and ever-corrupting human cultures—and with redemptive effects. Each of us belongs to one of the religious traditions, often more than we know. This is true even if one’s two parents belonged to different ones (though this, by the way, can be a psycho-spiritually critical situation).

Yours ever,

PHILIP MAIRET.

116 High St.
Lewes,
Sussex.

Postscript

Miss Masterman’s exegesis of the Faith of Athanasius has all my sympathy, for I am indebted to that great patristic symbol for a memorable moment of enlightenment. Alas; that I am too ignorant to follow her gloss upon it. But the fourth article crowns her fine account of the nature of scientific discovery and is most rewarding: I can even applaud the peroration at the end of such a discourse, for “the scientific-creative process” will indeed become the supreme gift of Christianity to the world when it is seen in her perspective. All honour to her valiant effort to find, for Science, the point at which it turns into Divinity! Anselm did this for metaphysic, surely it should not be impossible for pure physics—or is it? Never mind; the negative proof would be no less illuminating. Either way, however, this admirable investigation has not yet issued in a formula. But if and when it does, I think Miss Masterman would agree, the formula will be a koan. As Anselm’s is, in a way, is it not?

Review

The Glory of Man: Bampton Lectures for 1966. David Jenkins
S.C.M. Press. pp. x + 117. 18s.

This book might be described as an exercise in stereoscopic vision: an attempt to bring human life and Christian theology into a three-dimensional whole. David Jenkins is concerned to show that the questions which were discerned in the first five Christian centuries "in terms of the things concerning Jesus are the same questions as now confront us, about how we are to understand our human existence in the face of the processes of the universe and in the face of what actually happens in human lives, both individually and corporately" (pp. 18–19). "I assume", he says at the outset (p. 2), "that our concern is with persons. If it is not, then I assert that our concern *ought* to be with persons". Nor does he leave this assumption and this assertion unsupported. His appeal in the last resort is to what the reader himself finds is involved in being a person (cf. pp. 3–9, p. 81).

This granted, he seeks to show that "it is a proper and renewed understanding of the universal significance of Jesus which saves and fulfils our concern for persons" (p. 21). He maintains that "to discover that Jesus is the Christ is to discover the fact that is determinative of one's understanding of all other facts" (p. 37). Again this is no unsupported assertion: the whole book is a complex but lucid unpacking and vindication of what he means by this "discovery". "Man and the universe fit together", he affirms, "because of the involvement of God to that end" (p. 48). "Jesus Christ is the purposive and personal pattern of God and man in union" (p. 102), and so, "when the love of God and the love of man really get down to it they come to the same thing" or rather "to the same person" (p. 103).

The impressiveness of this book is of a dynamic rather than a monumental kind. It is a contribution to a continuing discussion, not a set piece. Its impact is therefore peculiarly liable to depend not only upon its own merits but upon the position at which it happens to find the particular reader. When (as for this reviewer) it comes precisely upon its hour, it proves not only illuminating but, more exactly, "edifying", in the old-fashioned sense with the moral not the priggish connotation of the word included. One is so to speak invited to build one's own thinking, indeed one's living, into that continuing structure which is "built upon the foundation of the apostles and prophets", whose criterion is that it should be "fitly

framed together". "Sermon-talk" this may be, but Bampton lectures are sermons. Their effectiveness has the right to depend, not of course upon a docile credulity, but upon an appreciative sympathy.

The criticism is bound to suggest itself that however adequate the foundations the edifice is a card-house, a *tour de force*, brilliantly ingenious but not substantial. The only answer to this criticism must be the book itself with all the ramifications of its argument, not a brief summary of it. One has moments of anxiety: moments of wondering whether to talk about man as a problem to himself, a problem only soluble if there is a Logos of the cosmos, is going to be artificial; or whether this fitting of God and the world together is going to be too neat; or indeed of whether an untidy "humanist" answer, that we must pick what value we can out of our miscellaneous world without expecting a God to bring it all into line for us, might not have to suffice. But when the argument is taken as a whole it has a pervasive honesty and reality which gradually and cumulatively draws the teeth of these doubts. The "meaningfulness" to which one is pointed is a practical understanding of what it could mean to be human, not a tissue of vague jargon; and the evidence offered for believing in it is solidly empirical, the "happenedness" of Christ, not wishfully pious (cf. pp. 22ff, 84). The whole argument has a firm footing both in the first and in the twentieth centuries, and it "shows its workings" as good arithmetic pupils are taught. Where it is doubtful or inconclusive, he says so (cf. pp. viii, 34, 91, 107, 113). Where it needs a precise and personal reference, he gives it. "I am personally the more ready", he says, "to accept the witness of the New Testament writers to the historically based nature of their understanding of Jesus because I find in practice that their writings serve to recreate in me and in relation to my own living, experiences, insights and occasions of a strengthening and life-enhancing nature which I can recognize as being analogous to, or continuous with, or even part of, experiences and insights to which they refer. Thus I have experimental grounds for holding them to be trustworthy witnesses to that of which they purport to speak" (pp. 23-4).

Readers of *Theoria to Theory* will want to know whether all this "experimental thinking" (p. 14) has indeed achieved "the grace to be truly scientific" (p. 111). The last word here must presumably lie with the scientist, but it would be a great pity if "the scientist" in question were to be one who had already succumbed to "the insidious plea that we must think what is 'thinkable'" (p. 14). To ask for a hearing from people who are prepared to step outside

the prejudices of their own generation need not be “unscientific”, provided that the argument is somehow kept well in touch with reality, and that resort is not made to a “God of the gaps” (p. 82). “The difficulty”, as he points out (p. 31), “lies not in the shakiness of the evidence but in what the evidence might be evidence for”.

What all this amounts to is, “read the book, and then pursue the argument”; so one must ask, in which direction? Theologically, one would much like to see the hint in the Postscript taken up (pp. 116–7) and the doctrine of the Trinity illuminated in the same manner as the doctrine of the Incarnation in these lectures. But both practically and theologically the main road ahead surely lies in the direction also indicated in the Postscript, in an exploration of what he calls the “communal dimension of personality and the fulfilment of personalness” (pp. 115–6). For the Christian understanding of “the things concerning Jesus” to be put into effect by people who are “willing to throw in their lot with others in the practical pursuit of the human, the worshipful and the Christ-like” (p. 115) is part of what the argument is about, not an optional development of it. So one is led straight into ethics, but into a kind of ethics entirely shot through with theology. The Postscript reads like a commentary on the text “He that doeth the will shall know of the doctrine”. It invites the hope that in Christian community the two enterprises of doing the will and learning the doctrine can enter into fruitful combination.

HELEN OPPENHEIMER.

Review: What the Vitalist *means* is right

Of Molecules and Men. Francis Crick.

Cambridge University Press 1966.

Crick's book *Of Molecules and Men* is one of several recent attempts (Monod, Sutherland and others have written on similar lines) to argue from the recent successes of molecular biology in the explanation of heredity to the conclusion that the mechanics of life are already essentially within our comprehension. The passion—one might say the evangelical fervour—with which these arguments have been put forward has been remarkable and leaves us in no doubt that here, at the sub-cellular level, the old battle front between the materialist philosophy and the religious outlook is now deployed. Moreover the authors of these extreme claims for the

essential completeness of current hereditary theory would probably wish to add that on all earlier fronts the religious outlook has been defeated and that defeat this time will be final because there is no other front for it to fall back on.

Whether this is really so, or whether, on the contrary, there are deep aspects of the human mind that ensure that this battle front will always exist somewhere, will be a long term question for readers and writers of this Journal. Certainly Crick and those who think like him see themselves tilting at real giants, even though they may think of those giants as products of human ignorance only. My present task, however, is the limited one of trying to see clearly some of the issues raised by Crick, and in particular to concentrate attention on "explanation" and "understanding" as Crick uses those ideas in the claims he makes for the war against vitalism.

Crick's book itself takes the form of an attack on vitalism, for in it Crick argues that it is now already possible to see that special concepts appropriate to living organisms are not necessary to explain the hereditary organization of living cells. Crick defines "vitalism" as the view that "there is some special force directing the growth or the behaviour of living systems which cannot be understood by our ordinary notions of physics and chemistry". This is not such a clear statement as it seems at first, when you really look into it, for considerable trouble arises—as I shall show later—in deciding what our "ordinary notions of physics and chemistry" are in those circumstances in which understanding really offers difficulties. A good deal of Crick's argument seems directed against a person whom I will call the "thus far and no further vitalist". He (the thus far and no further vitalist) wants to say that there is a range of phenomena which can be understood in terms of physics and chemistry and that beyond these there is a definite barrier which ordinary scientific method cannot penetrate, so that explanation and understanding must cease at that point.

The "thus far and no further vitalist" is always wrong. It comes quite near to a tautology, after all, to say that there can be no essentially incomprehensible phenomenon, for if we could have a sufficiently clear grasp of such a phenomenon as to delineate it and to decide that it was not capable of being explained, then we should have already concepts in terms of which the limits of our knowledge of that phenomenon could be pushed further back. Hence if Crick had confined his attack to the "thus far and no further vitalist" we could have no complaint.

However, it is when Crick wishes to pass from saying (a) that there is nothing about a living organism which in principle physics

and chemistry cannot further analyse, to saying (b) that the whole structure and behaviour of a living organism can in principle be understood making use of nothing beyond the laws of physics and chemistry, that he has made a claim that seems to me to involve at least one serious muddle.

Claims (a) and (b) are in fact very far from being equivalent, and my criticism of Crick's book will consist of an analysis of the consequences of his treating them as equivalent. The error that I find in this confusion is very widespread in science. A. N. Whitehead (*Science and the Modern World*, Cambridge 1927, p. 64) called it, in its general form, the "Fallacy of Misplaced Concreteness".

I will illustrate the effects of this fallacy in the case of a controversy that was once itself a battle ground in the materialist/religious-outlook war:—free will and determinism. One met with arguments of the following sort. "The behaviour of individual portions of matter is known to obey certain simple and elegant physical laws. Wherever we look we always have found that all portions of matter obey these same laws. Moreover, since these laws are expressible in a mathematical form which contains length and time as variables, the laws will govern the behaviour of all the portions of matter in the universe *simultaneously* and therefore these laws provide a description of the universe which is complete". Two corollaries from this statement that are frequently drawn, explain what is meant by "complete": first, there is no phenomenon which is not in principle deducible from the laws, and, second, any different description of the universe in terms of different concepts will in reality provide us with no new understanding (and if it appears to do so then that appearance is misleading) since (a) no prediction that is different from the predictions that can be made from the original laws is possible, and since (b) prediction should always be made from the simplest possible premises.

Arguments of this sort were felt to justify a jump from saying that in some simple cases complete causal descriptions of the motion of pieces of matter had been given, to saying that such complete descriptions must exist for all matter, and that free will is therefore an illusion. This controversy in this form is now a dead issue but the jump upon which the determinist argument depended has obviously more than a family resemblance to the jump Crick is making and which I have to examine.

Moreover, the freewill/determinism controversy is a good one to bring up in another connexion with regard to Crick's book for it is worth looking back to see why that controversy was once, but is no longer, a battlefield on the front which, Crick argues, is always

being pushed further into the religious territory. Actually this was a battle which went against hard-headed science. Classical mechanism was *in fact* due for a revision so basic—with the observation process taking a central place in theory—that we by no means see the extent of the changes yet. Hence the protests from the religious side sprang from a root that was realistic: only, we may object to the manner in which the protest came. However, we have to remember that the very rigid mechanistic philosophy that was prevalent 70 years ago had obtained such a grip over men's minds that the sophistication of—say—a Hume had little effect, and a crude disease induced a crude antibody—in a symbolic religious form.

Thus, that dogmatic science will tend to have its counterpart in dogmatic religion is a fact that should be borne in mind when one reads the large sections of Crick's book that deal with the naïveté and currently appalling standard of theological argument, and with the near-schizophrenia induced by traditional religious observance outside any reasonable framework of belief. However, these themes do not contain much that is original, and I shall return to Crick's main argument.

I do not want to consider the anti-vitalist case further from any general philosophical position regarding completeness in science. Rather, I want to investigate the completeness claim in the detailed context of Crick's discussion. Crick takes his stand on "our ordinary notions of physics and chemistry", and though of course he uses chemistry continually it is surprising how little he uses physics. What he does use, in considerable detail, is the computer model. The mechanisms for transferring information and for replicating structure that he describes are entirely digital processes depending on matching of ordered sets (strings) of discrete units which are recognizable in a completely all-or-none-manner. The best way to speak is to say that the processes of deduction (in the theory Crick describes) are all, or almost all, combinatorial. This character does not, of course, separate them sharply from the arguments one finds in many branches of physics and chemistry (especially chemistry) but the "ordinary notions of physics and chemistry" are always expressed on a background of dynamics, whereas in Crick's discussion the dynamics is scarcely referred to. It is this characteristic of Crick's argument—that the dynamics underlying the combinatorial system can be ignored as a first approximation and then dealt with piecemeal as occasion demands and as new information comes to hand—that makes his repeated use of the computer analogy especially important for him, and also

especially important for me to examine. In the case of the computer, the assumption that a suitable dynamical background to the combinatorial process can be taken for granted till more is known about it, is obviously reasonable. What we make a computer out of is well known to be irrelevant to its functioning provided only that the proper functions are obtained somehow. In the short history of computers there is hardly a single function that has not been implemented mechanically in several totally different ways. We are therefore justified in not minding what the engineers make computers of. Biological systems are different, however, in that no such sharp differentiation of combinatorial function from choice of material is possible. Molecular biology—on its own showing—is trying to show us a biological organism as a computer which is built out of its own tape! That is—to be slightly less aphoristic—to say that coding material and structural material coincide, and here perhaps lies the central excitement of molecular biology. However exciting, though, it is going to land us in enormous problems of control design which will have no counterpart in computer practice whatever.

Let us take a simple problem in control design. How does the cell know when to divide? Crick merely remarks that “the cell grows until a time comes when it is necessary for it to divide into two or it will become too big”. Clearly there must be some trigger device which responds to increase in size. We might try to keep the device combinatorial in nature by supposing that there is an upper limit of size determined as an assigned number of molecules inside the cell. This is the sort of thing we should have in a computer program written to simulate cell growth. We should quite naturally institute a count at regular periods. However, we can’t do this in an actual cell without considering what mechanism does the counting. It is impossible to count without at least storing some unit somewhere for each of the entities counted. But such units will themselves have to be molecules of some sort, so we are no further forward. So let us abandon combinatorial trigger mechanisms and admit that a point has to come at which we meet and consider dynamical ones. Let us be simple, at least to begin with. Perhaps the cell membrane has some rigidity, so that there is a steadily increasing pressure inside it as the amount of material increases. So perhaps the cell membrane then splits into more or less equal parts. Then suppose that the cell contents have a sort of surface activity that causes them to wet the cell wall as much as possible on the inside so that more or less equal halves are drawn apart with the broken pieces. Then suppose that the material of the cell

membrane is strongly active at free edges so that it attracts more molecules of the sort of which it is composed so that it seals itself up again. Then we have a good deal of what we want except that we have to explain why the original crack did not seal itself up at the outset. Well, we could suppose that the production of the necessary sort of membrane molecules is inhibited by high pressure, so that none are around when the original crack occurs. Or we can suppose a host of other things.

Now this is all amateur speculation uninhibited by the demand that it be checked by experiment at any stage. In fact, however, it is a logical point I am trying to make, and it does not make a great deal of difference to my point just how much happens to be currently known about—for example—rate control of enzyme actions by other enzymes. Frequently, in his book, Crick remarks that the details of a process are unknown at present and that further research at such a point is needed. The point of my piece of speculation is to illustrate the way that explanations of details of processes have of proliferating. I cannot, for my part, see that this proliferation is in the least surprising, nor that it could ever be eliminated. From the point of view of scientific practice there's no harm in this, and every piece of new knowledge must be of great interest to anyone interested in the nature of the living organism. The problem we have to come to grips with, however, still is, to what extent can experimental knowledge of the sort that—like my example—proliferates ever more problems, ever be called an explanation?

There are fields of enquiry—for example in fundamental physics—where it is possible to achieve a complete explanation of a phenomenon in spite of the fact that one could still go on in an ever proliferating series of questions of detail if one wished (the kinetic theory explained the phenomenon of latent heat of vaporization in this sense). To appreciate the difference between—say—latent heat and the phenomenon of detailed organization of the cell, let us imagine that some account such as the one I put forward turned out to be *true* in the sense that it enabled us to fit all the available evidence, and even new pieces of evidence, together nicely. Does that make it an *explanation*? It does not. It makes it a true description, but to be an explanation more is needed, for it is altogether too easy to find “explanations” of this sort. If it were the case that almost all the “explanations” that we could find could be ruled out on grounds of their being deductively inadequate, then the discovery of one that was a correct deduction and that in addition had the necessary experimental success, would be

significant. As it is we can cook up “explanations” like the one I gave by the thousand. All we have to do is to have a good knowledge of the kinds of mechanisms that have been found to work in other related contexts, so that they have an *a priori* plausibility (I don’t know whether my device of a self-extending cell membrane through unsaturated bonds on edge molecules is such a device or not, but it well might be). Then you fit these together and you have a theoretically possible “explanation”. At this point too, the general hypothesis of natural selection works strongly against the deductive adequacy of explanations, for that hypothesis makes it so easy to argue for the plausibility of any *ad hoc* postulated mechanism. Thus, in my “explanation” of the trigger mechanism for cell division I postulated molecules with very special properties. But there are lots of available molecules. If I can always invoke natural selection to pick me the right one, I just can’t go wrong. On the other hand, the less I can go wrong the less deductive validity my explanation has. The point should also be made that whether or not a model constructed in this way is what the cell actually does, it quite irrelevant to the question of whether that model constitutes an explanation of that aspect of the cell’s behaviour. To argue that the cell does it, therefore it must be an explanation, since everything—including cells—follows natural and comprehensible laws, is again to fall into Whitehead’s fallacy of misplaced concreteness.

What would an adequately deductive explanation look like? We have seen that it would have to amount to an adequately deductive treatment of the dynamics of the matter in the cell to explain how the coding system could be manipulated. We must have such a dynamics to replace the computer’s constructional and maintenance engineers. It is when we look at this requirement that we must be particularly careful not to presuppose the completeness of science except where we have actually demonstrated for each detail that the deduction in fact is complete; and it is at once clear that we have a task of very great complexity.

The deductive theory which seems most likely at first sight to provide a dynamical background for the interchange of coded information that is the main preoccupation of molecular biology is the theory of control systems. This theory has been applied to solving such problems as finding the most economical distributions of tasks and processes in assembly lines (an application which has obvious resemblances to the complex interrelations of process rates of reactions in the cell). In fact, however, control theory cannot be the missing dynamics that manipulates the coding system in the

cell. Control theory itself is built upon the assumption that the control channels or information channels are already fixed, so that the sense in which control can be dynamical in defining continuous ranges of values is quite different from that in which we are asking for a dynamics which operates the control channels themselves. One can perhaps imagine special conditions in which the dynamics could also be treated as a control system—for example by using randomization. Thus, if we imagine random continuous mixing of molecules in a cell so that each has a chance to react with any other given molecule after a fixed average time t , then one has only to vary a small set of parameters which would include t , and things like it, to govern the whole chemistry. However, apart from the artificiality of such an assumption (great difficulty of securing it and so on) no way of dealing with the boundaries of the cell presents itself and even such a simple problem as the behaviour of the cell membrane at division which I analysed earlier would be quite intractable.

The conclusion of this phase of my discussion is that there is no known way of constructing a deductive theory of the cell from hereditary information coding. In these circumstances one clearly does one's best using all the devices and analogies that current physics and chemistry—with all their wealth of knowledge of detailed processes—can supply. Thus there will grow up a variety of partial explanations each covering a small part of the total phenomenon of the cell's activity. Whether any given one of these partial explanations is really adequate in the sense of being deductive as well as agreeing with experiment within its own limited field, will always be a very complex question, and usually one about which there can reasonably be more than one opinion. Such questions will frequently require discussion of the utmost generality and fundamentalness about scientific method itself with one set of people saying that the model which is proposed for use is valid as the basis of explanation, while another set assert it is not.

We have seen a case of this kind produce active and continuing discussion over a century—namely teleological explanation. I would guess that Crick would not allow teleological explanation in its general form as such a part of the ordinary procedures of physics and chemistry, but that in the restricted form in which linear circuit theory can properly be regarded as a kind of teleological explanation, he would be quite ready to include it. But then, where do you draw the line? No one would wish to exclude the possibility that exciting new concepts may be discovered that will open out the range of the feedback concept and thus make

teleological explanation more tractable. However, the point I am making now is that we cannot possibly predict *beforehand* what such an opening out would look like till it has been done (and control theorists are well aware of the peculiar obscurity that seems to stand in the way of progress from the linear case to a non-linear control-theory of any complexity.) It follows also that until we have deductive theory, we cannot say whether the models in terms of which it is most natural to describe and think about it will resemble any of those now current in physics and chemistry, though I think it is reasonable to expect that they will have to be considerably different from anything we are now familiar with if they are really to handle the problem of control at—say—the cell level.

I have directed my attention to the question of how far Crick is right to claim explanation of biological phenomena in terms of physics and chemistry, but it should be recorded that some physicists have taken the extreme opposite point of view from Crick's and have argued that the degree and nature of the stability that is exhibited by biological systems in replication (reproduction in its genetic aspects) is inconsistent with the laws of quantum mechanics which govern the behaviour of the sub-microscopic components of living matter. The view of one such person—Elsasser—has been discussed elsewhere in this issue of this Journal by Pratt. Crick himself mentions another—Wigner—without however, coming to any conclusion. Wigner's argument concerns the probability of the transformation "one organism + food \rightarrow two organisms" arising as a quantum-mechanical change of state represented by a matrix transform.¹ He claims that it is impossibly low. (The argument—like Elsasser's—appeals to the essentially high degree of inhomogeneity of biological matter.) My own view is that Wigner's argument falls even further into the mistake of attributing completeness to science in an uncritical way than do the arguments of Crick with which I have dealt. Nevertheless, the study of the implications of the postulates of quantum theory for molecular biology raise questions of great importance. They are too complex and technical for this review.

I can now sum up my whole argument. We can't know what explanations in the true sense in the field of overall cell organization will be like until we actually have them. Hence perhaps the best thing to say of Crick's denial that there is some special force directing the growth or the behaviour of living systems is that it is difficult to give it any meaning. (I assume he means to

¹ Try this sentence on an expectant mother [Ed. T. to T.].

say no more that that he is sure that no barrier to our understanding of life will ever appear which in principle cannot be overcome by empirically based clear thinking, but what more he is affirming is very obscure.) For a new explanation is a new explanation: who can say whether it will include aspects which religious people will recognize as akin to ideas they have traditionally held. I think there have been some anti-dogmatic thinkers who have somehow incurred the name "vitalist" who have wanted to do no more than insist on keeping open the field of possible explanation. For such, in fact, one might adapt Wittgenstein's aphorism about the solipsist: "What the vitalist *means* is right".

TED BASTIN

Vitalism Revitalised?

(W. M. Elsasser's *Atom and Organism*)

(i)

It has often been said that man is a machine; and whenever it has been said, there have been men who have felt it as an insult. If the statement pretends to be a biological one, its implications carry across to religion and morality, and there they rouse up the passion of deeply held convictions. For some it is the battle cry of a militant science fresh from innumerable triumphs over obscurantism and spiritual reaction, poised for its final assault upon the innermost fortress of man himself; for others it represents the philistinism which first misses and then threatens to destroy all that makes life valuable.

Doubtless the conflict has been eased, if only marginally, by an admission on the part of the mechanists that the human being, and any animal, must be a very complicated machine indeed. The attempt to build machines which can simulate important aspects of organic behaviour has at least shown the enormity of the job in hand: the extreme sophistication of organisms has become plain. When Schwann in 1839 suggested that cells were simply a particular kind of crystal—the 'organisms are nothing but the form under which substances capable of inhibition crystallize'—he might have been on the right lines but he had a very long way to go (*Microscopical Researches*. Trans. H. Smith, London, 1847).

The direction however was the important thing, the distance merely a matter of time; and nowadays it is easy to assume that mechanism has so demoralised its rivals by a monotony of triumphs that it rules without serious challenge. 'Vitalism as a possible

theory of biology', writes Ernst Mayr, 'has been dead for some 40 or 50 years, as has been the entire argument of mechanism *versus* vitalism'. (R. S. Cohen & M. W. Wartofsky, eds.: *Boston Studies in the Philosophy of Science*. New York, 1965, p. 153).

But if the argument is dead, it is because mechanism is dead, not because mechanism has won. It died on its own back-door step, when classical physics yielded to quantum theory and withdrew to the periphery of approximation. Gone was the Laplacian concept of a Universe whose state was precisely determined by, and calculable from a precise knowledge of, the state which preceded it, its place taken by a set of new notions with which in many ways we have yet to come to terms.

The implications for biology are the subject of a recently published book by W. M. Elsasser. (*Atom and Organism*, Princeton, 1966.) There it is argued that some of the old vitalist views acquire a new significance alongside a non-mechanistic physics.

(ii)

Two things have been said by anti-mechanists in the past, both of which have been called vitalistic doctrines. One was that organisms behave in a characteristically *spontaneous* way, often acting independently of environmental conditions, and in clear contradiction to the mechanist slogan that 'like conditions produce like effects'.

A quite different vitalist thesis accepted that organic behaviour was perfectly determinate, but claimed that some of the laws which governed the process of life were peculiarly *organic*, that is, different, and not deducible from, the inorganic laws of physics and chemistry. If we label 'reductionist' the view which holds that biological laws are all of them derivable from or explicable in terms of laws of physics, then this second vitalist thesis is specifically 'anti-reductionist'.

Both these are reformulated by Elsasser. The first he couches in terms of prediction. Clearly, he begins, an organism is, at least, a physical system of extraordinary complexity. But in the light of quantum physics we can see four reasons why the behaviour of very complicated systems must be relatively unpredictable.

Firstly, complex systems have limited predictability because of 'the randomness of molecular positions and velocities involved in kinetic theory (statistical mechanics)' (p. 44). Secondly, predictability suffers from 'the unavoidable perturbations which, according to quantum mechanics, must occur as a result of measurements in the atomic and molecular domain. 'These,' Elsasser goes on,

'are cumulative in composite systems' (*Ibid.*). Thirdly, the presence of 'multiple feedback couplings' in the kind of complex system we are considering reduces predictability by allowing the spread of the perturbations initiated by the measuring process over the whole system.

Elsasser's fourth reason is less easy to understand, and it involves the argument upon which the distinctive thesis of his book is based. It goes like this :—

The predictions quantum mechanics give rise to are all of a statistical character. They say how likely it is that a particular event will happen. Now, says Elsasser, the only way in which such a prediction can have operational meaning is for it to be construed in terms of actual frequencies. For suppose the prediction were that the probability of X's happening in situation S were ten to one against. Now a single occurrence of X in S would not in itself count for or against this prediction. In order to know whether the prediction was a good one or not many occasions when the situation S obtained would have to be observed and a ratio struck between the number of times X occurred in S and the number of times X didn't occur in S. The prediction would then be falsified if this ratio showed no tendency to approach the figure 1 : 10 as more and more observations were made. Operationally, therefore, we must construe the prediction as saying that in an infinite number of similar situations the ratio between the number of times the event in question occurs to the number of times it fails to occur will be 10 : 1. Then by reference to the actual frequency of the event's occurrence, provided we consider a large number of cases, we have operational means of checking the prediction.

Elsasser puts this by saying that the predictions of quantum physics implicitly refer to *classes*, each class comprising an infinite number of identical individuals. Such a class Elsasser dubs homogeneous and infinite.

But the procedure we have outlined depends on the availability of a very large number of identical individuals (as a precondition of there being a very large number of similar situations). It is at this point that the distinctiveness of biological systems becomes clear. For, says Elsasser, in their case, this condition does not hold. Infinite homogeneous classes are not available in biology, and in so far as such classes are unavailable, the accuracy of prediction falls.

This then is the fourth reason Elsasser gives for the relative unpredictability of organisms' behaviour. He goes on to employ his 'principle of finite classes' (as he calls it) in an attempt to vindicate the second of the two vitalist tenets we mentioned above:

the anti-reductionist theses that there are, or could be, peculiarly biological laws distinct and underivable from the laws of physics. His argument seems to be simply this. Since infinite homogeneous classes are unavailable in biology, no attempt at prediction by quantum mechanics in this field can be meaningful: whatever happened it could not significantly count against a would-be prediction. In particular, *regularities* in what happens will not be significant in counting for or against any would-be prediction.

(iii)

The large difficulty with this argument is that if valid it proves too much. For there are aspects of an organism's behaviour which can very well be explained on the basis of inorganic laws. Yet the argument proves, if it proves anything, that *no* regularities found in the biological realm can be attributed to the operation of inorganic laws. Physics, the study of homogeneous classes, can have nothing to say about classes which are irreducibly inhomogeneous. In other words, none of the phenomena of biology can have anything to do with physics and chemistry.

It is clear that Elsasser does not wish to embrace so perverse a thesis. 'It stands to reason', he writes 'that the organism is in the first approximation, and foremost, a rather complex system of physico-chemical machinery... *A concept of life outside or apart from a specific set of physico-chemical mechanisms is completely meaningless*' (p. 105; Elsasser's italics).

The difficulty we have with understanding Elsasser at this point takes us directly to a problem which is basic to his whole position. When he asserts that physics involves homogeneous classes and denies their availability to biology, he is using 'homogeneous classes' in two rather different senses. In physics, the members or would-be members of the homogeneous classes are *individual* atoms or molecules, each in their particular state. But when Elsasser denies that homogeneous classes are available in biology he is referring not to individual atoms or molecules, but to *complex systems* of atoms and molecules, *viz.* organisms. Quotations from adjacent passages in the book, will make this point. First he defines "homogeneous class" thus:—

'A set of atoms or molecules, each having the same composition and all being in the same quantum state, will be denoted as a fully homogeneous class.' (p. 14.)

But he then asserts that:—

'radical inhomogeneity is by universal consent an outstanding

and altogether basic property of all the phenomena of life,' (p. 14).

and he goes on to support this by quoting 'no two cells are ever exactly alike' (p. 14), and 'no two blades of grass are ever alike' (p. 15). This contrast has formed the basis of much technical discussion. One point that can be made in support of arguments like Elsasser's is that a very early limit is always reached to strict deduction as soon as any degree of inhomogeneity is in question. In any case there are less technical things to be said about deduction.

First perhaps we ought to raise the question of distinguishing between being able to *deduce* biological laws from physics and being able to *explain* biological laws in terms of physics. It can be badly misleading to assume, as Elsasser recommends we do for the argument's sake, that the laws of physics are all known. As a matter of actual practice we are far from being able to deduce biological laws from physics, and methodologically speaking we begin with regularities observed at the macro-level which we subsequently try to explain in terms of chemistry, and ultimately physics. So we may find the reductionist thesis more plausible when expressed in the form of explaining the laws of one level in terms of laws established at another.

It is easy to imagine the establishment of laws accounting for regularities found by straightforward observation at the macro-level, which could not *at a particular time* be explained on the basis of known inorganic laws. Many examples, indeed, could be cited from biology today. But hitherto the assumption that there is an explanation for laws established at the macro-level in biology in terms of the laws of physics has surely been a great spur to research. Would not the anti-reductionist proposals, if taken seriously, have a correspondingly dampening effect? Might not the search for inorganic explanations be given up too easily? Elsasser, for one, offers no criteria for telling when the sponge is to be thrown in.

One has the feeling, therefore, that Elsasser is trying to sabotage biology's bridges before it reaches them. At present, surely, there is plenty of work to be done in discovering the chemical and physical mechanisms at work in living things. Molecular biology and cybernetics, to name only two fields, are at present offering plenty of inorganic food for biological thought. What is the point of looking for reasons why this process must, in the end, be incomplete? As far as biology's methodology is concerned, there is surely little point: it must press ahead with its search for 'inorganic' explanations

whether 'semi-autonomous' or not. Only when it gets stuck shall we have to think from a methodological point of view about 'semi-autonomy'.

(iv)

Though for his part Elsasser expressly repudiates it (p. 54), one important motive for the anti-mechanist school in the past, and for its modern counterpart, has been of a religious or metaphysical character. And, *pace* the popular modern view that physical determinism and human responsibility are perfectly compatible, the threat of a mechanistic biology, grounded in a mechanistic physics, seems to me to be real enough. If what happened tomorrow were determined by the physical state of things as they are today, then no decision I may come to between now and then can possibly affect what is to happen. Held precious either on purely ethical grounds or theologically because without freedom there can be no responsible creaturehood under God, human freedom can be but an illusion in a mechanistic universe.

But if the mechanist view is to have any empirical meaning it must be construed in terms of prediction. Operationally, to claim that tomorrow's events are already physically determined today can only be to claim that everything that will happen tomorrow can be *predicted* from what we can know about the physical state of things as they are today.

Couched in this form, the threat to freedom has been modified, if ever so slightly, by the revolution in physics. Prediction of the kind indicated has been shown theoretically to be impossible, even for simple physical systems. Doubtless the threat is there still, but it can no longer be framed so powerfully in terms of prediction; and it is difficult to find an alternative formula which has the same force and clarity.

In pointing out the loss of predictability when we move from simple physical systems to utterly complex biological ones, Elsasser has made valuable points in this connection. He has been expressing in modern terms, as we said earlier, what used to be called the *spontaneity* of living things' behaviour.

As to Elsasser's second, anti-reductionist, thesis, we found it unconvincing; and in any case, methodologically unhelpful. Should he wish to press his point, a clearer case will have to be made, or else, of course, the same one more clearly.

VERNON PRATT

SENTENCES*

For the soul takes its part in the outward actions which seem merely exterior, yet when they spring from this root [the service of God and her neighbour] are lovely, sweet-scented flowers, for they grow on the tree of love for God solely for his own sake, unmixed with self-interest. The perfume of these blossoms is wafted to a distance, benefiting many souls and is lasting for it does not pass away without working great good.

I will explain myself more fully for your benefit. A preacher delivers his sermon for the profit of souls, yet is not so free from desire of worldly advantages as not to try to please his hearers, either to win some honour and credit for himself or to obtain some canonry by his eloquence. It is the same in other ways; certain people are anxious to help their neighbour and with a good intention, but are very wary about losing by it or giving offence. They dread persecution, wish to keep on good terms with royalty, the upper classes, and the general public, and act with moderation, so highly rated by the world, which screens many imperfections under the name of prudence. God grant it is prudence.

Such people serve God and do great good, yet I do not think these are the good works and blossoms for which the Bride begs, but that she petitions for an intention of seeking solely the honour and glory of God in all things. For truly as I have witnessed in several cases, I believe that souls raised by Him to this state are as oblivious as if they no longer existed of their own loss or gain. Their one thought is to serve and please God, and knowing His love for his creatures, they delight in leaving their own comfort and advantages to gratify Him by helping and teaching the truth to others as best they can in order to profit their souls. They never calculate as to whether they will lose by it themselves, but think about the welfare of others and of nothing else, forgetting themselves for the sake of others in order to please God better—and they will even lose their lives if need be, as did many of the martyrs. Their words are so interpenetrated with this supreme love for God, so that, inebriated with this heavenly wine, they never think, or if they think, they do not care, whether they offend men by what they say. Such people do immense good.

* *Minor Works of St. Teresa*, pp. 148–149, “Conceptions of the Love of God”. Translated by the Benedictines of Stanbrook, 1939, and quoted by their permission.

NOTES ON CONTRIBUTORS

Father Thomas Corbishley, S.J. was Master of Campion Hall, Oxford, from 1945–1958, and Superior of Farm Street Church, London, W.1, from 1958–1966. Now spends most of his time preaching, lecturing and writing. Publications include *Roman Catholicism, Religion is Reasonable, The Contemporary Christian*.

Alasdair MacIntyre read classics at the University of London and philosophy at Manchester. He has taught philosophy and/or sociology at the universities of Manchester, Leeds, Oxford, Princeton and Essex. Co-editor with A. G. N. Flew of *New Essays in Philosophical Theology*. Author of *The Unconscious, A Short History of Ethics, and Secularisation and Moral Change*.

Thomas Merton read modern languages at Clare College, Cambridge and did graduate work at Columbia University. He joined the Cistercian (Trappist) Order, and is at the Abbey of Gethsemani, Kentucky. He has written an autobiography, *Elected Silence* and a number of books on the contemplative life, including *Seeds of Contemplation, Waters of Silence, Mystics and Zen*.

Ray Furness studied at the Universities of Wales, Munich and Berlin, and is now lecturer in German in the University of Manchester. He says that two years' national service (Russian course and Intelligence Corps) gave ample leisure for introspection; he was introduced as an undergraduate by Erich Heller to Nietzsche's thought and has never been quite the same since.

J. S. Griffith read Mathematics and Biochemistry at Trinity College, Cambridge and was a Research Fellow at King's College, Cambridge. He is now Professor of Applied Mathematics at Bedford College, London. Author of *The Theory of Transition—Metal Ions* (1961), *The Irreducible Tensor Method for Molecular Symmetry Groups* (1962), *A View of the Brain* (1967) and various articles.

Vernon Pratt read philosophy at Manchester and Oxford and is starting to teach it in the University College of South Wales. He is interested in the philosophy of religion, the philosophy of science, and the production of plays.

Iulia de Beausobre (Lady Namier) was born in Russia of Russian parents, and spent her early childhood between St. Petersburg and Alexandrovka in the Government of Samara (beyond the Volga). In 1917 married Nicholas de Beausobre who was killed in the GPU prison of Moscow in January 1933 after she had been transferred from that prison to a concentration camp east of Moscow. Having left Russia for England in the spring of 1934, she published *The Woman Who Could Not Die* in 1938; was naturalized a British subject in 1939; published *Flame in the Snow* in 1945; married L. B. Namier in June 1947; is at present engaged on writing his biography.

John Thoday took his first degree in botany from the University College of North Wales, worked for twelve years in Sheffield, and is now Professor of Genetics in Cambridge. After working as a radiation cytologist he became interested in the causes and functions of genetic variation in natural populations, upon which he has done several experiments. He has also written on the nature and meaning of biological progress.

Robert Thouless has retired from being Reader in Educational Psychology in the University of Cambridge. He is a past president of the Society for Psychical Research, and has done extensive experimental work on paranormal phenomena.

Islwyn Blythin read Semitics at the University College of North Wales and Theology at Cambridge. After teaching Hebrew and Old Testament Studies in the University of Bristol, he returned to Bangor as Lecturer in the History of Religions. Member of the O.T. translation panel of the New Welsh Bible.

Helen Oppenheimer is married with three daughters, a graduate of Lady Margaret Hall, Oxford, and lectures on ethics at Cuddesdon College. Author of *Law and Love* and *The Character of Christian Morality*.

Desmond Henry, who designed the cover, read philosophy in Leeds, and now lectures in philosophy in the University of Manchester; he is also a former art student. The use of converted computer mechanisms is one of several novel art-techniques he has devised. Computer drawings were among the works exhibited at his first one-man show in the West End (Reid Gallery) in 1962. Since then he has had several one-man shows, including the world's first "one-machine" show.

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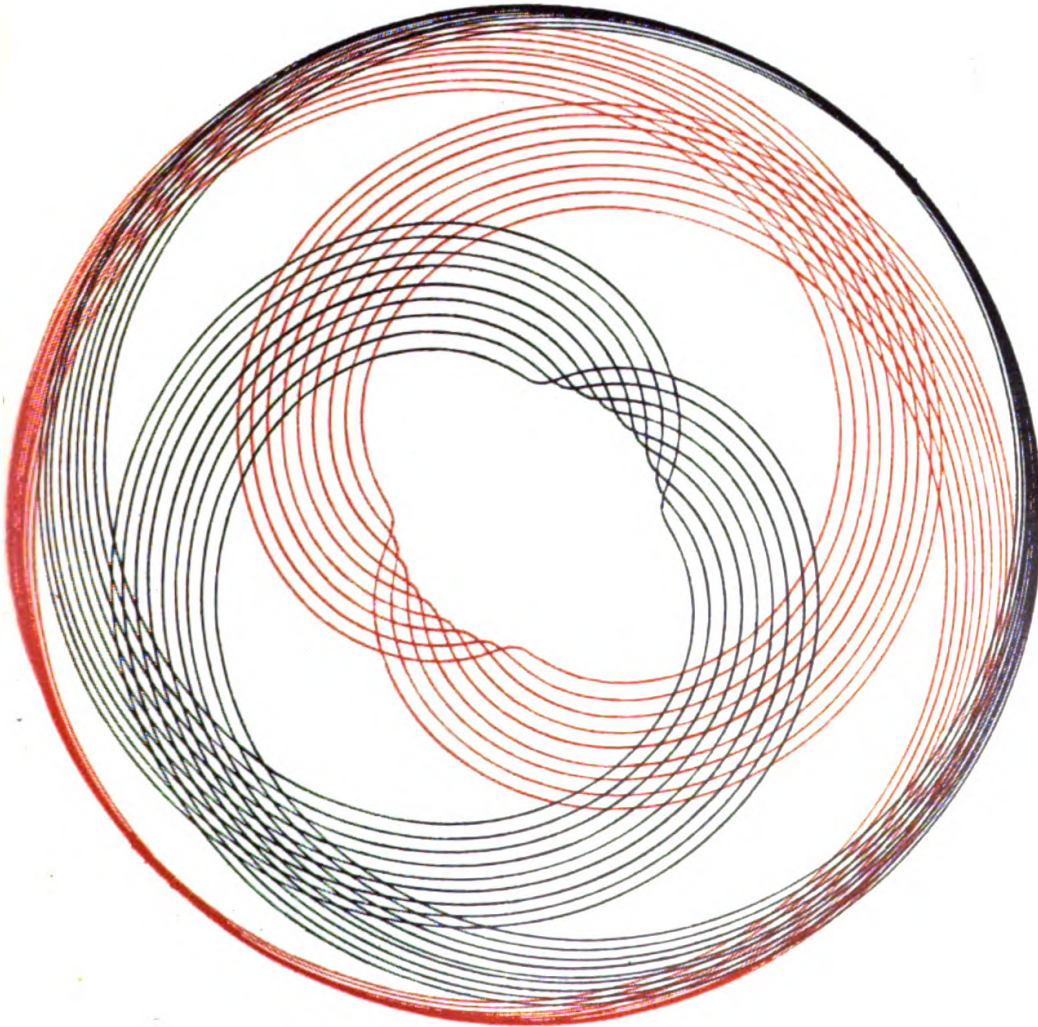
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Printed by W Heffer & Sons Ltd Cambridge England

Volume 2
Second Quarter
January 1968



Theoria to Theory



THEORIA TO THEORY

Theoria to Theory is published for the Epiphany Philosophers by Pergamon Press, Oxford, London, New York, Paris. Advertising office: 4 Fitzroy Square, W.1 (01-387 4455). Subscriptions and orders to: Subscriptions Dept., Pergamon Press Ltd., Headington Hill Hall, Oxford (64881). 7/6 a copy; annual subscription (for 4 quarterly issues), U.K. only 30/-, U.S.A. and Canada \$5, other countries 35/-.

Editorial correspondence, submitted articles, and books for review should be addressed to The Editor, *Theoria to Theory*, 9, Marion Close, Cambridge.

Editor : Dorothy Emmet.
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Editorial

We are often asked about the purpose of this journal. This was defined in the first number as trying to see how "Theoria", insights given in contemplative religion, might be developed into "Theory", which could have the openness of scientific theory, its solidity, and capacity to produce agreement.

At the time when we issued the first number we thought that we would have almost no specialists from any discipline with us in this enterprise; producing T. to T. then seemed a back-to-the-wall affair, both financially and intellectually; something which had to be done by a blind act of faith more than from any real hope that the enterprise would turn out a possible one. Academic specialists were keeping narrowly within their own specialities—with the complication that such theological people as followed the Bishop of Woolwich and Van Buren were leaning over backwards to get away from religion and to say their own speciality did not exist. Those who did speculate about the relations of religion and science—and it was noticeable that it was mostly the scientists who wanted to do this—took the view that there must be "two worlds", "two languages", "two ways of knowing". But they never said what the worlds were, or what was the relation between them.

* * *

Two things, however, are now clear. One is that there is a strong determination and desire among thoughtful and competent people in all sorts of places that the thrust forward, of which T. to T. is a part, should be maintained. Within this larger number there is a smaller but not negligible number who are prepared to give a priority to maintaining it. Those who want fundamental questions to be brought up in this sort of way are more in number and quality than we realized. Secondly, the question then arises as to what to do next: we must go in stages, and the stage of prophecy must be converted, however gradually, into achievement.

We shall not progress to the next stage by continually making surveys of "Science" in vast vistas and "Religions" in large lumps, but by concentrating our efforts and developing the detailed study of a few primary growing points. A "growing point" is any particular field of study where, as between Science and Religion, the unlikely one of the pair has something constructive to contribute in such a way that the orthodoxy of the other member of the pair

is violently upset. Thus in the nineteenth century Darwin's evolutionary hypothesis was exceedingly constructive within a whole range of sciences from anatomy to anthropology, but it violently upset the orthodoxy of all those religions which held that the world was a static world created once for all in a limited time. In this case it was religious orthodoxy that was upset. Now however it is much more tending to be the case that wherever a scientific orthodoxy presupposes the existence of a crudely static mechanism, it is quite often, though not always, the eruption of the human factor into the situation that is likely to upset it. Not all these cases are obviously religious, though religion is concerned, among other things, with dealing with human factors. The classical case of the entry of a human factor into science, and the advances that came of it, was when the Astronomer Royal, Maskelyne, in 1796 dismissed his assistant because the latter was consistently recording the times of stellar transits 8/10ths of a second after he did himself. This set Bessel, the astronomer in Königsberg, on to studying the "personal equation" as he called it, in the difference between the moments when different observers reported that a star was seen to cross a line, and from this psychologists got on to discovering differences of reaction rates between different people, and differences in the rates of entry of nervous impulses of sight and sound, and also the importance of "attentive disposition" in people's perception rates. "Half a century later psychologists were ready to accept the principle that the latent times for perception vary so greatly that attentive predisposition may cause an incoming impulse to mill round in the brain waiting for the attention to be ready to receive it". (Boring, *History of Experimental Psychology*, pp. 134 ff). Maskelyne's assistant can be accounted one of the martyrs of science, in that his unjust dismissal led not only to this psychological work on reaction times, but also drew attention to the importance of seeing how the observer enters into the situation he observes.

The human element can also come in through the compulsive propensity of people working in a new science to escalate their claims, when there are still no neutral terms to think in because the field is so new. Thus in an article in *The Observer*, April 9, 1967, N. S. Sutherland forecast that the computer revolution would "lead to our substituting the intelligence of machines for that of our brains". But "in order to give computers the same start in life as we ourselves have, they need to be able to read and understand speech". And now comes an escalation. "Chomsky is attempting to discover a finite set of formal rules which will generate any grammatical sentence. Although most of us are unaware of these rules

they must be represented in our own brains. Otherwise we would be unable to speak our own language or to understand it when we hear it spoken. Since Chomsky's rules are well defined and do not depend on intuition, it is possible in principle to programme a machine to act in accordance with these rules". Philosophers know that there is trouble over Chomsky; be that as it may, note how this passes from what is being *attempted* to what *must* be and to what is the case. Such excess claims produce a thesis; then a reaction produces an antithesis. In an article in this issue, Hubert Dreyfus maintains that a lot of these things cannot be done *in principle* in artificial intelligence. Possibly some of the things that Dreyfus says can't be done because of the firm line he draws between what is formalizable and what is not will be able to be done by more subtle techniques, but only when it is realized that what is needed is not the substitution of machines for men, but techniques of interaction between machines and men. As soon as we can begin to see where the synthesis lies we shall get a growing point which we should never have had but for the upheaval about the claims of "artificial intelligence".

Another way in which a growing point can occur is where ranges of facts, the existence of which is suspected from the religious side, can upset the basis of scientific disciplines which then have to be re-organized to take account of them. One such possible range which needs looking into seriously is the physiology underlying the various forms of Hindu Yoga, which uses and develops psycho-physical centres (chakras) going up the spine, which ordinary physiology doesn't find. We hope to discuss this in a coming number. Again, to take account of the phenomena of advanced religious contemplation (increasing claims are being made that they are both repeatable and predictable) would require the re-organization both of psychology and sociology, let alone the re-interpretation of the religious texts of all the world's religions. We hope to go into this at intervals for the next five or ten years.

At the moment it is so much *de rigeur* to make critical comments, informed either by cynicism or despair, that it will seem corny (if not worse) to allow even the slightest suspicion that the fundamental intellectual situation of the human race is a hopeful one. But in fact once we have the courage equally to confront all the orthodoxies by abandoning the current religion-and-science schizophrenia, and letting religious and scientific insights interact with one another, hope begins to show on all sides. For every growing point (in the sense defined) represents the possibility of a fundamental advance, and every such advance will be an upheaval. But we can go deep

and we are free; there is no more need to believe everything Sutherland says in *The Observer* than to believe everything the Pope says in his encyclicals.

* * *

In our Dialogue in this number we have picked up again the question of Stress, itself a considerable growing point for the human sciences since the secularly-minded social scientists tend to look on it as something to get rid of and the religiously-minded as something to be embraced. We are also beginning to describe a phenomenon which in its religious aspects is a contemporary version of the flight to the desert in the first centuries of Christianity (only the desert today is generally not geographical but in people's own inner life). There is however also a literal flight going on by aeroplane to the Himalayas. Marshall McLuhan has remarked that the West is turning East just as the East is turning West. As a prelude to the study of the Flight to the East, we are here printing three articles on the Withdrawal in the West (a closely connected phenomenon). Next time we hope to have a Dialogue on the philosophy behind the Black Power movement. An article by Andrew Sinclair in the *Sunday Times* colour supplement on December 17 gave a perceptive account of the contemporary vow of violence, of which this is one form.

* * *

We are not only interested in the *avant-garde* young, but in the gay and adventurous old. Our adventure story in this number is an account of a Jordan village settlement written for us by its founder and leader Winifred Coate. We have selected this subject not just because the question of what is to happen to refugees in Jordan is in the news (though it is, and this story shows what can be done by one person who really tries), but because it illustrates the coming together of different kinds of imagination, archaeological, technical, social, and religious. And in these days, when there is moaning over what people are to do in retirement, it is worth noting that Winifred Coate pioneered this project after she retired, and continues with it in full vigour in her 70's.

* * *

Stop Press. Three T. to T.-relevant things have happened recently. One is that biologists have produced a cell-free system which copies the D.N.A. system of the living cell and replicates in an

enzyme taken from a living cell. This has been popularly, though wrongly, called "making life in a test tube". Secondly there was the controversial television programme "Assault on Life". The fact that it seems that the television presentation did not fully reflect the views of the scientists who took part in it complicates, but does not remove, the questions it raised. It will take time to go into both of these things properly, but they have the feel of growing points. Thirdly, Edmund Leach, who was Anthony Bloom's partner in our third dialogue, has talked about "A Runaway World" in his Reith Lectures. We intend to have a three handed discussion next time, with Edmund Leach replying (as with Austin Farrer's "A Science of God?" and Ian Ramsey's "Models and Mystery"). For though these lectures may be too general to constitute a "growing point" the interest that they have aroused shows that they are at least a churning point.

Dialogue Between Evelyn and Guy:

Stress

Evelyn Derry, Minister in the Church of the Christian Community (based on the teaching of Rudolf Steiner); Guy Wint, Author and Journalist.

Guy: States of stress are normal in the human mind. Stress is a normal accompaniment of artistic and intellectual creativeness and moreover is a concomitant of all competitiveness in life. He who goes to a psychiatrist to be cured of stress is like the man who goes to a doctor to complain of life. A life lived without stress is a life against Nature; and as such is really full of stress, though this may be in a more or less disguised form. So I don't think we should proceed on the basis of stress being abnormal—but we *are* concerned with unnatural stress which is a state of disorganization which arises when there is a turbulent rush of ideas and conflicting emotions with no order or pattern. They disturb logical development in the mind, and prevent any kind of order in mental processes. The mind is threatened with disintegration. At the same time, we have to recognize logical orderly life is pretty unnatural. Natural life is pretty anarchic. So we come back to the point that emotionally produced strain is an entirely normal condition.

Evelyn: Certainly stress does appear to be a normal—I'd prefer to use the word natural—condition of the human being, in that he finds himself through processes of dealing with stresses. For instance, a person is poised between that which comes to him from within his own inner world and that which meets him from the world beyond himself. I would think that this tension is the original stress which we have experienced at the dawning of our human consciousness in childhood and which continues with us throughout our conscious life.

Guy: Aren't there two kinds of stresses, one which proceeds from the hyper-development of the Ego and one which proceeds from a too weak development? In this second form the Ego is submerged by the stream of emotions and ideas which are utterly uncontrolled, so much so that the individual is shattered, no pattern from the Ego is imposed upon this stream, and all is anarchy and confusion. As an extreme example of this type you have what is called the autistic state of the human consciousness.

Evelyn: I think the basic distinction between the two types is justified. Can you give some symptoms of the hyper-development type?

Guy: This type is insufficiently receptive when the swell of ideas breaks on the individual; the Ego asserts itself and becomes supreme over the form of consciousness, and in doing so develops a constant aim to dominate and impose itself. In this case stress shows itself in an extreme tension resulting from the effort to maintain the ascendancy of the will, and to maintain the arbitrary pattern which has been decided on.

Evelyn: An example of this would be the social problems produced in big business, where the pattern of the organization is imposed on all the staff from above downwards. This would, I believe, explain why so many young people wish to opt out from the careers offered to them ready made. One could even add that a successful young executive has to accommodate himself to the type required by the organization.

Guy: And of course there is the too weak central organization. In that case tension results from a sense of powerlessness and a hostile universe. The play of events is sensed all around, and the individual feels himself impotent to intervene and control it. This is one of the most common forms of stress today. It is the form of stress which one meets with every day. For example there is the man who does not vote at elections; he is too sceptical about whether his vote can influence affairs. Again, there is the person whose energy to protest is eroded by the sense of the uselessness of his protest. He has the feeling that society is always run by a dictatorial "they" and not by "us". In the last century this became a very notable social disease in Russia in the writing of the mid-1800's. It found expression in nihilism and the cult of the "superfluous man". In the extreme case this tendency is reflected in the state known to psychiatrists as "*la belle indifférence*". This takes the form of an apparent lack of all stress, and the cure for it is artificially induced stress. The person suffering from this state of mind is abnormally calm, composed, indifferent to disaster or jubilation. He is so because of a deep despair of his ability to control events.

Evelyn: Your example seems to me to confirm the observation that in spite of the dangers of abnormal stress the experience of stress itself is sought by the healthy human being.

Guy: Yes. Yes!

Evelyn: In my own experience of this subject I have found a valuable clue in the picture of the essential nature of the human soul put forward by Rudolf Steiner in his work. He points to the Ego or Self as the lasting core of the human constitution. This Self is psychologically exposed to influences which attempt to pull in opposite directions. Reactions of two kinds are continually playing upon the Self, the one in the direction of the "too much", the other in the direction of the "too little". To go back to the picture with which we started, a pull too much into the world outside, and, by contrast, a retreat too strongly away from it into the world within.

Guy: Let us consider for a moment the application of all this to politics. In political life far more strain is engendered in the present century than was ever known in the past two centuries. It is a concentrated, permanent tension. A good way of recognizing this is to compare the newspaper of today and the newspaper of a century ago. One fact stands out. Mankind is much easier to govern under conditions where stressful events are happening daily than in conditions of security. Paradox though this may seem to be, yet it is true, as our daily practice of politics proves. This means that man in general approves of stress as part of the public environment provided that the stress does not involve him too closely in person.

Evelyn: This goes to show that stress is a factor in public as well as private life. German history alternates between classic periods of stress and periods of extreme boredom.

Guy: And it suggests that abnormal stress results from a disharmony in human development. The Utopian life provides for a development with equal force along different channels. But where some of these channels are blocked then one gets the outbreak of stress, as a kind of protest from the unconscious human mind.

Evelyn: Here I must beg to disagree with you that the human being is styled for a Utopian state of existence. Through stress he can develop to further states of mind and consciousness and the

longing to do so is deep within him. Even abnormal stress can be used, when it is overcome, for the sake of advance. I have observed when travelling in Africa the kind of stress common among Bantu-speaking people. In the old tribal society they were accustomed to living on two interchanging levels of consciousness. The one belonged to the occupations of every day life, the other was an ecstatic condition produced by religious rituals and was undoubtedly for them the more important. The European-minded people with whom they must now share their life take seriously only the first state of mind and tend to decry the importance of the second. Under modern conditions of life outside tribal society the Africans tend to suffer from intense boredom. They are expected to play football instead of performing the ancient rituals of the night.

Guy: But if this is true of the Bantu-speaking peoples, isn't it a universally valid truth for all humanity? Has it not been the weakness of European civilization that since at least the time of the Dionysiac festivals of the Greeks we have consistently ignored the hunger of the human mind for ecstatic living, and is not the history of the past 2,000 years one of systematic boredom, punctuated by brief spells of horrendous incident such as the last two world wars? There is the surely very significant fact that during the last war the figures of admissions to mental hospitals dropped very greatly.

Evelyn: That seems to me a sound observation. The two last wars have been signs of social disease, but this again is a sign of stress in history. For a long period the human mind has been concentrated in developing a sober sense of self which would be lost in experiences of ecstasy. But now the Self should have become strong enough within itself to advance to experiences of a spiritual nature. The solution to boredom both for Africans and Europeans would be to find themselves as members of a real spiritual universe. This is where I see the importance of Rudolf Steiner's picture of man's place in the world.

Guy: Historically one should perhaps say that the discipline of anti-ecstatic life has been developed to a quite peculiar degree in Protestant Europe. The non-ecstatic discipline is found especially among certain sects and leaders of opinion of Protestantism though of course one would need to modify this because of the ecstatic cult of conversion and of being "washed in the blood of the Lamb". Of

course, there is also a Puritan strain of immense power which from time to time has manifested itself in the Catholic church, and to this extent Catholic Europe has been as bad as Protestant. But there has been a saving humanity in the Catholic tradition which is not found among the Protestants.

Evelyn: I agree that for the future we need a new and much bigger experience of Christianity than is provided by either Protestant or Catholic churches. The need shows itself in such popular aberrations as the seeking for experiences which ought to be "spiritual" or "Christian" through drugs. Drug takers have to accept "hang overs", but are looking for ecstasies.

Guy: Why drugs today? What is the special factor in the stress of the 1960's which has led to drug-taking? After all, drugs were very fashionable among a very limited circle in the time of Coleridge and de Quincey but there was no mass outbreak of drugs at that time. Again, in the 1890's opium dens were familiar features in popular magazines, but there was no quasi-religious cult. Sherlock Holmes used to retire to an opium den when he was low-spirited; and there were Rossetti and Elizabeth Siddel. But all of these resorted to their drugs as a way of meeting private needs of their personality. None proclaimed that the use of the drug was a way of salvation for all the world which the world was irrational not to take. Only today have large masses of people, from Oxford and Cambridge undergraduates to the Rolling Stones, espoused drugs with the self confidence of say, the Oxford Group Movement and Dr. Buchman. This is very remarkable. Surely this means that our ancestors, even the most Puritan among them, had no desire to transform themselves utterly, and to affect a real regeneration. The virtue of the young today is that they hanker more truly for the rebirth, which their ancestors claimed to obtain by the processes of revivalism, and are prepared to take unheard risks to achieve it. The melancholy end may be that they are left as walking corpses by a foredoomed experiment, and this is the tragedy of the generation which is about twenty years old at the present day. For immediate precedents for the drug mania you have the opium addiction of large masses of the Chinese people before this was put a stop to by Chinese Communism. But this proceeded from political despair, not metaphysical. Incidentally the speed and completeness with which this opium habit among the Chinese was dealt with is one of the really amazing triumphs of Chinese Communism. It shows that Communism came as a very deep and satisfying answer to Chinese

needs. For a precedent more valid for ourselves, you have the organized taking of mescaline by the Red Indians of North America, which, besides inducing other hallucinations, gave them the delusion that they were again free huntsmen, roaming the prairie in search of bison. They took it communally, and precisely with this object. Their yearning came principally from spiritual emptiness. It was a cult interesting in itself, and is well worth study. But it was found among a tiny minority of people whose problem was simply one of boredom from living protected lives in a reservation. In other words, in a human zoo. It was not one which affected the broad civilization of the time.

Evelyn: I would think that drug taking produces new experiences beyond those of the everyday without effort of will. They just happen. It is a sign of weakness in the Ego, a very widespread weakness, that people wish to have something happen which should rightly be attained through their own efforts. The cure for the longing that leads to drugs would be meditation. But the old type which is sought now by some of those who give up drugs is not one which is fitted for the modern human being. He will experience healthy stress in the effort to use his own thinking and willing for the purpose of spiritual experience. He will escape from the need for effort, as he does with the help of drugs, if he follows old oriental methods which are based upon making things happen to him, that is to say, presenting him with visions. There is a form of meditation both modern and suited to the nature of the European mind. It is not a form of escape and is therefore hard work. Rudolf Steiner has given the clearest description of this type in several books.

Guy: But if drugs are taken for producing ecstasy, one has to ask whether they are in fact detrimental. What is there intrinsically wrong about drug taking? Is it either that they do not produce an ecstasy which is satisfying, or is it that in general they have a physically corrupting effect? The failure to give a satisfactory answer to this second question is the basis of the entire dilemma of the present time about drugs. Surely it is possible to obtain a precise statement, scientifically beyond challenge, about the physical effect of drugs. Yet we are in the bizarre position that nobody is sure about whether a common drug like marijuana has a deleterious effect. To take one example, the recent advertisement in *The Times* listed a number of very eminent psychologists such as Dr. Stafford Clark staking their professional reputations on the

non-toxic, non-harmful nature of the drug. On the other hand the deep conviction of an overwhelmingly high percentage of people is that it is harmful. A decision between these two attitudes is most urgently required.

Evelyn: Yes, indeed. I quite see the problem, and would have to say I have the starting point of an answer rather than a complete answer. One would need to start by considering the mysterious problem of what happens in a healthy person when a thought becomes an action. There is clearly a gap in consciousness between thinking something and finding that one has or has not carried it out. If that mysterious gap would be understood, then from this would follow a more exact understanding of what is taking place in pathological conditions. I believe that experiences would show that the damage done by drug taking is just in the place where thinking and willing should meet.

Guy: Does this mean that the effect of taking drugs is essentially different from the effect of meditation?

Evelyn: Yes, here I would see the dividing line between the pathological and the healthy. But the term "meditation" is general and vague. As I said before, in my opinion today we need a new type which I would call truly "Christian", based upon the principle that the conscious Self or Ego uses the powers of thinking and willing to contact the spiritual realities beyond himself. He needs to expand into the mind of the universe, which some people would prefer to call the mind of God.

Guy: But if the present wave of drug taking leads to ultimate disillusionment, what happens next? May we not be faced with a new form of contracting out of stress, which would be a modern version of the very old custom of suicide? May we not be faced with a situation like that in *Zuleika Dobson*, of the mass suicide of undergraduates of Oxford and Cambridge? Hitherto the prohibition of self-slaughter has been very powerful in the Christian tradition and that of most other religions. But the change in thought is surely very significant among some of the South Bank theologians. An article in the current number of the *Southwark Review* by an Essex clergyman is truly revolutionary. It presents suicide as almost a Christian duty of the infirm, the disabled, the pessimistic, or those who are unable to perform their duty to the community of being taxable members of society. Suicide is made

respectable. There has been little adverse comment upon this most drastic change in Christian ethics. What do we make of that?

Evelyn: All human beings are an investment in the future of human evolution. Many of them may appear to be socially a burden in the present, but nevertheless, it is our ability to evolve which gives to any of us our spiritual importance. Accepting suicide as respectable and therefore justifiable is a means of denying the future for the sake of the present convenience. It is likely that the point of view you have quoted will become quite acceptable to those who have no confidence in the human future. Suicide is after all, individually and in the mass, a confession of failure.

Guy: And an expression of dislike of the universe.

Evelyn: And an ultimate way of trying to contract out of stress. But shouldn't we now turn to the fact that human development proves to be impossible without stress? How can we find its positive uses?

Guy: Well, what about them?

Evelyn: May I take a practical example from ethics? How does the human conscience function? Not by distinguishing right from wrong, but by establishing a right which is found by overcoming the stress between two kinds of wrong. Someone who shows courage has had to overcome the tendency to be a coward, but also the tendency to be foolhardy. The person who is generous has solved the problem of meanness but also that of extravagance.

Guy: Wouldn't you also have to say that the person who speaks German well has had to overcome the tendency to be a good ping pong player or to shoot rhinoceros well in Africa?

Evelyn: Of course, because the initial stress is the presence of tendencies pulling in opposite directions which the Self has to overcome in order that anything can be achieved. Another positive use is surely to be found where someone experiences the special stress that arises from facing the world with a disability.

Guy: Speaking as a disabled person, I, with all respect, say there is more nonsense talked about the virtues of being one-armed or

one-legged than about anything else in history. As an avid reader of the reminiscences of people stricken with disability, I have yet to find a poet who wrote better poems, a mathematician who solved better problems, or an inventor who invented more deadly machines by being cut off from the world in the middle of his career.

Evelyn: What about Beethoven composing after he became deaf?

Guy: Yes, but Beethoven acquired the habit of composing as a young man and simply went on in deafness by the impetus of his early years. I don't think you will find there is anything in Beethoven's later works that can be attributed precisely to the experience of being deaf.

Evelyn: But is there not a special quality arising out of the work done under the stress of a disability, when the stress arising from the disability is transformed? Some people have learnt to do something they would never have done otherwise.

Guy: It is true that Beethoven in his later quartets produced a new quality not found elsewhere in his works, but whether this was attributable to his deafness is a matter for conjecture. It may have been simply the development of Beethoven's mind which would have taken place anyway.

Evelyn: Nevertheless, I do believe stress has its positive uses. This doesn't mean that its dangers can be overlooked.

Guy: Can you suggest ways in which it can be reduced?

Evelyn: Yes, starting from the fact that the human being lives in a constant interchange of states of consciousness. If a person is asked to maintain one type of concentration too long at a stretch he will come into danger. Most people today do not know how to rest. They easily assume that doing nothing at all is the cure for weariness. In fact weariness, even sleeplessness, is often the result of overstress and understress coming together. If, for instance, a job has required intense intellectual concentration, the other forces of the human constitution will have been under used. The cure would be to follow an intellectual job by a rhythmic activity, walking, dancing, painting, gardening.

Guy: Unfortunately most gardening is back-breaking rather than back-relaxing.

Evelyn: Nevertheless, the chores of everyday can be looked on as a counter-action to other kinds of stress, providing they aren't piling up on you.

Guy: Take women's lives. In the fairly recent past the women of the privileged classes lived a gilded life. The dominant feature was the absence of any decision of consequence. They were busy in a routine way, but they rarely had to make any decision that mattered. Contrast this with today. Even at the most humble level they are cumbered round hourly with complex decisions. Far from our moving into an age of leisure, we are moving into an age of pressure. Instead of leisure where there is no decision making and no consequent stress, we are moving into an age where every half hour is decisive. Consequently there will be a very much increased degree of stress in society. Indeed, how to provide for this stress, how to avoid the breakdown for society, how to avoid the contracting out through drugs or other means is going to be the chief problem of the times.

Evelyn: That would imply that stress always gets people down, but there is another point of view. Calling on higher and deeper forces to overcome the stress in the end produces a stronger self to face further sets of decisions. Stress can therefore be interpreted as the opportunity of opportunities.

Pseudo-Strides Towards Artificial Intelligence*

Hubert L. Dreyfus

It is fitting to begin with a statement made in 1957 by H. A. Simon, one of the originators of the field of artificial intelligence :

It is not my aim to surprise or shock you. . . . But the simplest way I can summarize is to say that there are now in the world machines that think, that learn and that create. Moreover, their ability to do these things is going to increase rapidly until—in a visible future—the range of problems they can handle will be co-extensive with the range to which the human mind has been applied.¹

The speaker predicts :

1. That within ten years a digital computer will be the world's chess champion.
2. That within ten years a digital computer will discover and prove an important mathematical theorem.

We do not have time to go into the deliberate confusions surrounding the supposed proof of an important theorem. Suffice it to say that to date no important or even original theorem has been proved. We will, however, follow the chess-playing story in some detail, for it might serve as a model for the production of intellectual smog in this area. In 1958, a year after his prediction, Simon presented an elaborate chess-playing programme. As described in his classic paper, "Chess Playing and the Problem of Complexity", his programme was "not yet fully debugged", so that one "cannot say very

* This article largely follows one with the title "Why computers must have bodies in order to be intelligent", published in the *Review of Metaphysics*, Vol. XXI, No. 1, September 1967. Some examples have been incorporated from the paper "Phenomenology and Artificial Intelligence" in the volume *Phenomenology in America* edited by James M. Edie (Quadrangle Books, Chicago 1967). The copyright of all these articles is with Hubert L. Dreyfus. A more detailed analysis of the problems discussed in this article, as well as those in the fields of game playing and language translation can be found in the author's paper, *Alchemy and Artificial Intelligence*, RAND paper, p. 3244.

¹ H. A. Simon and Allen Newell, "Heuristic Problem Solving: The Next Advance in Operation Research", *Operations Research*, VI (January-February 1958), 7 and 8.

much about the behaviour of the programme". Still, it is clearly "good in the opening".³ This is the last detailed published report on the programme. In the same year, however, Simon announced: "We have written a programme that plays chess".⁴

In fact, in its few recorded games the Simon programme played poor but legal chess, and in its last bout (October 1960) was beaten in thirty-five moves by a ten-year-old novice. Fact, however, had ceased to be relevant. Simon's claims concerning his still bugged programme had launched the chess machine into the realm of scientific mythology. In 1959 Norbert Wiener, whose optimism was strengthened by the claim that the programme was "good in the opening", informed the N.Y.U. Institute of Philosophy that "chess-playing machines as of now will counter the moves of a master game with the moves recognized as right in the text books, up to some point in the middle game".⁴ In the same symposium, Michael Scriven moved from the ambiguous claim that machines play chess to the claim that "machines are already capable of a good game".⁵

While his programme was losing its five or six poor games—and his mythical machine was holding its own against masters in the middle game—Simon kept silent. When he spoke again, three years later, he did not report his difficulties and disappointments; rather, as if to take up where the myth had left off, Simon published an article in *Behavioral Science* announcing a programme which would play "highly creative" chess end games involving "combinations as difficult as any that have been recorded in chess history".⁶ That the programme restricts these end games to dependence on continuing checks, so that the number of relevant moves is greatly reduced, is mentioned but not emphasized. On the contrary, Simon misleadingly implies that similar simple procedures would account for master play even in the middle game.

Thus the article gives the impression that the chess prediction is almost realized, and indeed, with such progress the chess champion-

³ Allen Newell, J. C. Shaw and H. A. Simon, "Chess-Playing Programs and the Problem of Complexity", in Edward A. Feigenbaum and Julian Feldman, eds., *Computers and Thought*, New York, 1963, p. 60.

⁴ Allen Newell, J. C. Shaw, and H. A. Simon, *The Processes of Creative Thinking*, RAND Corporation, p. 1320, 1958, p. 6.

⁴ Norbert Wiener, "The Brain and the Machine", in Sidney Hook, ed., *Dimensions of Mind*, New York, 1960, p. 110.

⁵ Michael Scriven, "The Compleat Robot: A Prolegomena to Androidology", in Hook, ed., *Dimensions of Mind*, p. 128.

⁶ H. A. Simon and Peter A. Simon, "Trial and Error Search in Solving Difficult Problems: Evidence from the Game of Chess", *Behavioral Science*, VII (October 1962), 429.

ship may be *claimed* at any moment. This production of confusion makes one think of a French mythical beast which is supposed to secrete the fog necessary for its own respiration.

Similarly unfulfilled predictions have been made in the areas of pattern recognition and problem solving. But philosophers have other interests than to be the conscience of a technical field which has been lax in critically evaluating its failures. What should interest us is the philosophical significance of these unexpected difficulties: what underlying philosophical assumptions lead workers in artificial intelligence (AI) to interpret their apparent failures as only temporary set backs, and their modest success as justifying unbounded optimism? Can these assumptions be justified? If not, the stagnation of work in AI would cease to be surprising and, moreover, would give us new reasons to question the validity of the assumptions on which such work is based.

All AI work is done on digital computers because they are the only all-purpose information processing devices which we know how to design or even conceive of at present. All information with which these computers operate must be represented in terms of binary digits, i.e., in terms of a series of yes's and no's, of switches being open or closed. The machine must operate on finite strings of these determinate elements as a series of objects related to each other only by rules. Thus, psychologically, the computer is a model of the mind as conceived of by associationists (for the elements) and intellectualists (for the rules). Both associationists and intellectualists share the traditional conception of thinking as data processing—a third person process in which the involvement of the “processor” plays no essential part. Moreover, since all information fed into such machines must be in terms of bits, the belief that such machines can be made to behave intelligently presupposes that all relevant information about the world must be expressible in an isolable, determinate way.

Thus given digital computers, workers in AI are necessarily committed to two basic assumptions:

1. An epistemological assumption that all intelligent behaviour can be simulated by a device whose only mode of information processing is that of a detached, disembodied, objective observer.
2. The ontological assumption, related to logical atomism, that everything essential to intelligent behaviour can in principle be understood in terms of a determinate set of independent elements.

In brief, the belief in the possibility of AI, given present computers, is the belief that all that is essential to human intelligence

can be formalized. This formalist aim has dominated philosophy since Plato, who set the goal by limiting the real to the intelligible, and the intelligible to that which could be made fully explicit, so as to be grasped by any rational being. Leibniz pushed this position one step further by conceiving of a universal logical language capable of expressing everything in explicit terms, which would permit thinking to achieve its goal of becoming pure manipulation of this formalism. Digital computers and information theory have given us the hardware and the conceptual tools to implement Leibniz's vision. We are now witnessing the last act wherein this conception of man as essentially rational, and rationality as essentially calculation, will either triumph or else reveal its inherent inadequacies.

It has already produced a certain irony. Computer technology has been most successful in stimulating the so-called "higher" rational functions—those which were once supposed to be uniquely human. Computers can deal brilliantly with ideal languages and abstract logical relations. (Wang's programme has proved 200 theorems from *Principia Mathematica* in less than three minutes.) It turns out that it is the sort of intelligence which we share with animals, such as pattern recognition, that has resisted machine simulation.

Simon, who has been only slightly daunted by the failures of the last ten years, now feels that "machines will be capable, within *twenty* years, of doing any work that a man can do",⁷ although he admits: "Automation of a flexible central nervous system will be feasible long before automation of a comparatively flexible sensory, manipulative, or locomotive system".⁸ But what if the work of the central nervous system depends on the locomotive system, or what if the "higher", determinate, logical, and detached forms of intelligence are necessarily derived from and guided by global and involved "lower" forms? Then Simon's optimism, as well as the two assumptions underlying AI and traditional philosophy, would be unjustified. It is this existentialist thesis which I shall attempt to explain and defend.

I shall consider two areas in which work in AI has not fulfilled early expectations: pattern recognition and problem solving. In each, I will try to account for the failure by arguing that the task in question cannot be formalized, and by isolating the non-formal form of information processing necessarily involved. Finally, I will

⁷ Herbert Simon, *The Shape of Automation for Men and Management* (New York, 1965), p. 96. (My italics.)

⁸ *Ibid.*, p. 40.

try to show that the non-formalizable form of information processing in question is possible only for embodied beings, where being embodied does not merely mean being able to move and to operate manipulators.

1. *Pattern recognition.* Work in pattern recognition is characteristic of work in all areas of AI. Some striking successes have been achieved, but they are based on techniques which, for practical reasons, do not seem to be generalizable, and the important problems for pattern recognition, such as how to recognize objects or speech sounds, have so far proved intractable.

There are pattern recognition programmes now in operation which can recognize letters and numbers printed in various type fonts, and programmes which can be taught to recognize the handwriting of specific persons. These all operate by searching for certain topological features of the characters to be recognized, and checking these features against pre-set or learned "definitions" of each letter in terms of these traits. The trick is to find relevant features, i.e., those that remain generally invariant throughout variations of size and orientation, and other distortions. This approach has been surprisingly successful where recognition depends on a small number of specific traits. The number of traits that can be looked up in a reasonable amount of time is limited, however, and present programmes have already reached this technological limit.

The restricted applicability of such programmes suggests that human pattern recognition may proceed in some other way, and indeed, phenomenologists such as Gurwitsch, as well as gestalt psychologists, have pointed out that our recognition of ordinary spatial or temporal objects does not seem to operate by checking off a list of isolable, neutral, specific traits. For example, in recognizing a melody, the notes get the values they have by being recognized as part of the melody, rather than the melody's being built up out of independently recognized notes. Likewise, in the preception of objects there are no neutral traits. The same hazy layer which I would see as dust if I thought I was confronting a wax apple might appear as moisture if I thought I was seeing a fresh apple. The significance of the details and indeed their very look is determined by my perception of the whole.

The recognition of spoken language offers the most striking demonstration of this global character of our experience. From time to time brash predictions have been made about mechanical secretaries into which (or at whom) one could speak, and whose

programmes would analyse the sounds into words and type out the results. In fact, no one knows how to begin to make such a versatile device. Current work has shown that the same physical constellation of sound waves is heard as quite different phonemes, depending on the expected meaning. As Anthony Oettinger of the Harvard Computation Laboratory has put it in a paper to be published by Bell Laboratories:

The essentially discrete and invariant nature of the phoneme, so evident to the linguist concerned with the phonemic analysis . . . has turned out to be most unexpectedly elusive in the absence of a human agent.

This leads Oettinger to the conclusion:

Perhaps . . . in perception as well as in conscious scholarly analysis, the phoneme comes after the fact, namely, . . . it is constructed, if at all, as a *consequence* of perception not as a step in the process of perception itself.

This would mean that the total meaning of a sentence (or a melody or a perceptual object) determines the value to be assigned to the elements.

Oettinger goes on reluctantly to suggest these conclusions:

It may well be that an understanding of the meaning of a sentence is a precondition for . . . the analysis of the sentence into phonemic components. The possibility is a frightening one to face. . . . Yet the school boy asked to parse a sentence proceeds neither like a machine nor like a generative grammar, at least there is no evidence that he does. On the contrary, the scant evidence there is, suggests that he works backwards, going from meaning to structure.

The phenomenologist Husserl argued that, in recognizing an object, we give a global meaning—a noema—to an otherwise indeterminate but determinable sensuous matter. We then proceed to make this open global meaning more determinate by exploring what Husserl called its inner horizon.

This process can best be noticed when it is breaking down. If you reach for a glass of water and get milk by mistake, on taking a sip your first reaction is total disorientation. You don't taste water, but you don't taste milk either. You have a mouthful of what Husserl would call pure sensuous matter (hyletic data), and naturally you want to spit it out. Or, if you find the right noema fast enough, you may recover in time to recognize, i.e., organize the

milk for what it is. Its other characteristics, whether it is fresh or sour, buttermilk or skimmed milk, will then fall into place.

One might well wonder how it is possible to avoid looking for some neutral features to begin this process of recognition. In fact, such a description may seem so paradoxical as to make us try to explain the phenomenon away. But we must bear in mind that each meaning is given in a context which is already organized, and on the basis of which we have certain expectations. It is also important that we sometimes *do* give the wrong meaning; in these cases the data coming in makes no sense at all, and we have to try a new *total* hypothesis.

It is hard to imagine how a computer, which must operate on completely determinate data according to strictly defined rules, could be programmed to use an underdetermined expectation of the whole in order to determine the elements of that whole. But workers in AI might answer that, even if people do use some sort of holistic approach based on context which no one now knows how to program, there is no reason in principle why some alternative approach could not be discovered which would do the same job. One could, for example, deal more efficiently with a large number of specific traits, or one could develop a sort of anticipation which on the basis of certain traits in the context would assign an object to a class defined in terms of a large number of traits, which would then serve as hypotheses. This answer, however, ignores a unique feature of human pattern recognition: our ability to recognize family resemblances where, as Wittgenstein points out, two individuals recognized as belonging to the same family need have no exactly similar traits in common. We can nonetheless recognize such similarities by picking out a typical case and introducing intermediate cases. This use of paradigms and context rather than class definitions allows our recognition of patterns to be open-textured in a way which is impossible for an recognition based on a specific list of traits.

Oettinger is justified in concluding his paper on a pessimistic note: "If indeed we have an ability to use a global context without recourse to formalization . . . then our optimistic discrete enumerative approach is doomed. . . ."

But how, then, do human beings operate with wholes, the elements of which cannot exhaustively be specified? Husserl has no answer beyond the assertion that we do: that transcendental consciousness has the "*wunderbar*" capacity for giving meanings and thus making possible the perception, recognition, and exploration of enduring objects. There is no way to criticize this view

except to say that it is frustrating. It states a problem without proposing any solution. For further help we must turn to the existential phenomenologists, and in particular to Merleau-Ponty, who postulates that it is the body which confers the meanings discovered by Husserl. Being prepared to feel silk, for example, is to move or be prepared to move our hand in a certain way, and to have certain expectations. As in the case of the milk, if we have the wrong expectations we experience only confused sensations. It is easiest to become aware of the role of the body in taste and touch, but seeing, too, is a skill that has to be learned. Focusing, getting the right perspective, picking out certain details, all involve coordinated actions and anticipations. As Piaget remarks, "Perceptual constancy seems to be the product of genuine actions, which consist of actual or potential movements of the glance or of the organs concerned. . . ." ⁹

Moreover, as Merleau-Ponty has pointed out, the body is able to respond as a whole to its environment. When the percipient acquires a skill, he

. . . does not weld together individual movements and individual stimuli but acquires the power to respond with a certain type of solution to situations of a certain general form. The situations may differ widely from place to place, and the response movements may be entrusted sometimes to one operative organ, sometimes to another, both situations and responses in the various cases having in common not so much a partial identity of elements as shared significance.¹⁰

Thus, an anticipation of an object does not arouse a single response or specific set of responses but a flexible skill that can be brought to bear in an infinite number of ways. I can feel silk with either hand or even with my feet. As already noted these anticipations need not be completely specific, but can become more specific in the course of examining the object. Thus we give a global meaning to our perceptual experience by bringing to it a set of interdependent and underdetermined skills which experience gradually fills in and makes more determinate.

A human perceiver, like a machine, needs feedback to find out if he has successfully recognized an object. But there is an important difference in the feedback involved. A machine can, at best, make a specific set of hypotheses and then find out if they have been

⁹ Cf. J. Piaget, *Psychology of Intelligence* (New York, 1966), p. 82.

¹⁰ Maurice Merleau-Ponty. *Phenomenology of Perception* (London 1962), p. 142.

confirmed or refuted by the data. The body allows a much more flexible criterion of what fulfills its expectations. It need not check for specific characteristics or a specific range of characteristics, but simply for whether, on the basis of its expectations, it is coping with the object. Furthermore, coping need not be defined by any specific set of traits but rather by an ongoing mastery which Merleau-Ponty calls *maximum prise*. Thus, whereas present programmes call for a machine to *recognize* an object in order to manipulate it, a human being can *manipulate* an object in order to recognize it.

To conclude: pattern recognition is relatively easy for digital computers if there are a few specific traits which define the pattern, but complex pattern recognition has proved intractable using these methods. Transcendental phenomenologists have pointed out that human beings recognize complex patterns by projecting a somewhat indeterminate whole which is progressively filled in by anticipated experiences. Existential phenomenologists have related this ability to our active, organically interconnected body, set to respond to its environment in terms of a continual sense of its own functioning. This embodied sort of information processing makes possible the open texture of pattern recognition which would seem to be impossible for a system with a finite set of states.

2. *Problem solving*. Again, an early success: In 1957 Newell, Shaw, and Simon's Logic Theorist, using heuristically guided trial-and-error, proved 38 out of 52 theorems from *Principia Mathematica*. Two years later the pretentiously named General Problem Solver (GPS), using more sophisticated means/end analysis, solved the "cannibal and missionary" problem and other problems of similar complexity.

In 1961, after comparing a machine trace with a protocol that matched the machine output to some extent, Newell and Simon jubilantly announced:

Subsequent work has tended to confirm [our] initial hunch, and to demonstrate that heuristics, or rules of thumb, form the integral core of human problem-solving processes. As we begin to understand the nature of the heuristics that people use in thinking, the mystery begins to dissolve from such (heretofore) vaguely understood processes as "intuition" and "judgment".¹¹

But as we have seen in the case of pattern recognition, difficulties have an annoying way of reasserting themselves. This time, the "mystery" of judgment reappears in terms of the organizational

¹¹ H. A. Simon. *Modelling Human Mental Processes*, The RAND Corporation, p. 2221 (Feb. 20, 1961), p. 12.

aspects of the problem-solving programmes. In "Some Problems of Basic Organization in Problem-Solving Programmes" (December 1962), Newell discusses some of the problems which arise in organizing the Chess Programme, the Logic Theorist, and especially the GPS with a candour rare in the field, and admits, "Most of them are unsolved to some extent, either completely, or because the solutions that have been adopted are still unsatisfactory in one way or another".¹² No further progress in solving these basic problems has been reported.

What is lacking is a way of organizing the problem so that one can see which operations are significant and which trivial. Wertheimer, in his classic work *Productive Thinking*, points out that the associationist account of problem solving excludes the most important aspect of problem-solving behaviour, viz., a grasp of the essential structure of the problem, which he calls "insight". In this operation one breaks away from the surface structure and sees the basic problem—what Wertheimer call the "deeper structure"—which enables one to recognize the steps necessary for a solution.

This gestaltist conception may seem antithetical to the operational concepts demanded in artificial intelligence, but in fact this restructuring is surreptitiously presupposed by the work of Newell, Shaw and Simon themselves. In *The Processes of Creative Thinking*, they introduce "the heuristics of planning" to account for characteristics of the subject's protocol which are lacking in a simple means/end analysis.

We have devised a programme . . . to describe the way some of our subjects handle logic problems, and perhaps the easiest way to show what is involved in planning is to describe the programme. On a purely pragmatic basis, the twelve operators that are admitted in this system of logic can be put in two classes, which we shall call "essential" and "inessential" operators, respectively. Essential operators are those which, when applied to an expression, make "large" changes in its appearance—change " $P \vee P$ " to " P ", for example. Inessential operators are those which make "small" changes—e.g., change " $P \vee Q$ " to " $Q \vee P$ ". As we have said, the distinction is purely pragmatic. Of the twelve operators in this calculus, we have classified eight as essential and four as inessential. . . .¹³

¹² Allen Newell, *Some Problems of Basic Organization in Problem Solving Programs*, The RAND Corporation, RM 3283-PR, Dec. 1962, p. 4.

¹³ Allen Newell, J. C. Shaw, and H. A. Simon, *The Processes of Creative Thinking*, The RAND Corporation, P-1320 (Sept. 16, 1958), pp. 43–44.

No comment is necessary. We need only note that the classification of operators into essential and inessential, the function Wertheimer calls "finding the deeper structure" or "insight", is not part of the programme. It is *introduced by the programmers* before the so-called planning programme begins.

No one has even tried to suggest how a machine could perform this structuring operation or how it could be learned; in fact, it is itself one of the conditions for learning from past experience. The ability to distinguish the essential from the inessential seems to be a uniquely human form of information processing, one not amenable to the mechanical search techniques which may operate once this distinction has been made. It is precisely this function of intelligence which resists further progress in the problem-solving field.

The difficulty becomes even more acute if one wishes to deal with everyday problems rather than formal ones. With formal problems, planning is a matter of practical necessity; in the case of ill-defined problems, it is necessary in principle. Since there is no limit to the amount of data which may be relevant for solving an ill-defined problem, one cannot even in principle try all the permutations of possibly relevant data in seeking a solution. In such cases one must not only determine which operations bring about essential transformations, but which facts from the total context are relevant.

Even in a non-formal game like playing the horses—which is still much more systematic than the everyday ill-structured problems that Simon once predicted machines would be able to handle—an unlimited set of conditions becomes relevant. In placing a bet we can usually restrict ourselves to facts about the horse's age, jockey, and past performance. Perhaps, if restricted to these facts, the machine could do fairly well, possibly better than an average handicapper; but there are always other factors such as whether the horse is allergic to goldenrod or whether the jockey has just had a fight with the owner, which *may* in some cases be decisive. If the machine were to examine explicitly each possibly relevant factor as a determinate bit of information, in order to determine whether to consider or ignore it, it could never complete the calculations necessary to predict the outcome of a single race. If, on the other hand, the machine systematically excluded possibly relevant factors in order to complete its calculations, then it would sometimes be incapable of performing as well as an intelligent human.

The difficulties of simple means/end analysis suggest that, in order for the machine to structure its own data in terms of significance and relevance, it is not sufficient for it to have an objective

goal and to measure its progress towards this pre-set end. We have seen that "pragmatic considerations" were necessary to structure the logic programme before it could begin, and that the end must not only serve as a test of progress but must modify our evaluation of the steps which lead to it.¹⁴ Interest in the goal is present at each moment and structures the whole of experience, so that each detail is seen as relevant or irrelevant to that end.

Moreover, an important feature of pragmatic problem solving is completely neglected by workers in AI : in creative problem solving we do not know what our goal is until we have achieved it. We do not have a list of determinate objective specifications which the solution must fulfil.

To understand these features of problem solving we require a concrete phenomenological analysis of needs. My colleague Samuel Todes has provided just such an analysis. According to Todes, our bodily needs give us our sense of the task at hand, in terms of which our experience is structured as significant or insignificant. These needs moreover have a very special structure. When we experience a need we do not at first know what it is we want. We must search to discover what allays our restlessness or discomfort. This is not found by comparing various objects and activities with some objective, determinate criterion, but through what Todes calls our sense of gratification. This gratification is experienced as the discovery of what we needed all along, but it is a retroactive understanding and covers up the fact that we were unable to make our need determinate without first receiving that gratification. The original fulfilment of any need is, therefore, what Todes calls a creative discovery. Only such an analysis of human needs can both account for our ability to order our experience in terms of relevance and significance and at the same time allow determination of the goal of creative problem solving to remain part of the problem-solving task.

To summarize: The work in problem-solving programmes has shown that we must structure our problems into essential (necessary, indispensable, most needed) operations and accidental operations, and select the relevant data. Only an analysis of the gestalting process by which human interests structure human experience can account for these abilities. The crucial rôle of interests in

¹⁴ Samuel's checker programme does this, but only by examining all permutations of evaluations of moves and checking these evaluations against the outcome of play in each case. This is a successful *ad hoc* strategy, but it is only possible where there is a small and clearly defined set of evaluations and of alternatives to be evaluated.

determining relevance and significance has been neglected by AI workers, who have unknowingly smuggled in their own interests.

Interests and goals cannot be simulated on a digital machine whose only mode of existence is a series of determinate states and which, like a disinterested observer, has, at best, specific targets rather than needs. Without this human form of information processing, no digital computer can cope with the indefinite number of possibly relevant facts in the everyday world, or solve ill-defined problems.

3. *Mechanical bodies.* Since it turns out that pattern recognition is a bodily skill, and since accident/essence discrimination seems to be based on bodily needs, the question of whether artificial intelligence is possible boils down to the question of whether there can be an artificial embodied agent. I will take up this question in the remainder of this paper. Remember, however, that the question is philosophically interesting only if we restrict ourselves to asking if one can make such a robot by using a digital computer and mechanical hardware. (I assume there is no reason why, in principle, one could not construct an artificial embodied agent if one used components sufficiently like those which make up a human being.)

A project to build such a *digitally* controlled robot is currently under way at M.I.T., and it is philosophically interesting to consider its progress and its underlying assumptions. The project director, Marvin Minsky, is modestly trying to make only a mechanical shoulder, arm, and hand, co-ordinated with a TV eye, but his none-too-modest ambition is to make it use tools to construct things. The first simple task is to programme the robot arm to pick up blocks. This has indeed been accomplished and represents the typical early success one has learned to expect in the field. The problem which remains is, as usual, that of generalizing the present successful techniques. To bring a simple arm over to pick up a block requires locating the block in objective space, locating the arm in the same space, and then bringing the two together. This is already quite a feat. At present, it takes the machine minutes just to pick up a block. A more flexible arm endowed with more degrees of freedom will involve calculations requiring even longer computations. If one adds to this the fact that, in the case of any skill which takes place in real time (such as playing ping pong), these calculations must be completed before the ball arrives, the outlook is not very promising.

In the light of these difficulties, what encourages researchers to devote their research facilities to such a project? Simply the

conviction that since we are, as Minsky puts it, “meat machines” and are able to play ping pong, there is no reason in principle or in practice why a metal machine cannot do likewise. But before jumping to such a conclusion, particularly when time and money are at stake, the robot makers ought first to examine their underlying assumption that no essential difference exists between meat machines and metal machines, between being embodied and controlling movable manipulators. How do human beings play ping pong, or to make the matter simpler, how do human beings use tools?

Heidegger, Merleau-Ponty, and Michael Polanyi have each devoted a great deal of thought to this question. They each discuss the important way that our experience of a tool we are using differs from our experience of an object. A blind man who runs his hand along the stick he uses to grope his way will be aware of its objective characteristics. When he is using it, however, he is not aware of its objective traits nor of the pressure in the palm of his hand. Rather, the stick has become, like his body, a transparent access to objects. As Polanyi puts it:

While we rely on a tool or a probe, these are not handled as external objects . . . they remain on our side . . . forming part of ourselves, the operating persons. We pour ourselves out into them and assimilate them as parts of our existence. We accept them existentially by dwelling in them.¹⁵

In this way we are able to bring the probe into contact with an object in physical space without needing to be aware of the physical location of the probe. Merleau-Ponty notes that:

The whole operation takes place in the domain of the phenomenal; it does not run through the objective world, and only the spectator, who lends his objective representation to the living body of the active subject, can believe that . . . the hand moves in objective space.¹⁶

But, as Merleau-Ponty admits, this ability seems “magical” from the point of view of science and, rather than have no explanation of what people are able to do, the scientist quite justifiably embraces the assumption that people are unconsciously running with incredible speed through the enormous calculation which would be involved in programming a computer to perform a similar task. However implausible, this view gains persuasiveness from the absence of an alternative account.

¹⁵ Michael Polanyi, *Personal Knowledge* (London, 1958), p. 59.

¹⁶ *Op. cit.*, p. 106.

To make embodiment an acceptable alternative we will have to explain how one could perform physical tasks without in any way appealing to the principles of physics or geometry. Consider the act of randomly waving my hand in the air. I am not trying to place my objective hand at an objective point in space. To perform this waving I need not take into account the geometry, since I am not attempting any specific achievement. Now suppose that, in this random trashing about, I happen to touch something, and that this satisfies and thereby makes partially determinate a need, a need to cope with things. I can then repeat *whatever I did*—this time *in order to* touch something—without appealing to the laws necessary to describe it as a physical motion. I now have a way of bringing two objects together in objective space without appealing to any principle except: “Do that again”. This is the way skills are built up. The important thing about skills is that, although *science* requires that the skilled performance be *described* according to rules, these rules need in no way be *involved* in producing the performance.

Human beings are further capable of remembering, refining, and reorganizing these somewhat indeterminate motor schemata. Piaget has amassed an enormous amount of evidence tracing this development and has come to a gestaltist conclusion:

The specific nature of operations . . . depends . . . on the fact that they never exist in a discontinuous state. . . . A single operation could not be an operation because the peculiarity of operations is that they form systems. Here we may well protest vigorously against logical atomism . . . a grievous hindrance to the psychology of thought.¹⁷

For the AI researcher it seems that intelligent behaviour can be produced only by running through the calculations necessary to

¹⁷ *Op. cit.*, p. 35. These motor schemata must have their muscular and neural basis, but there is no reason to suppose that these physical correlates are reducible to a series of determinate states. Both the global and undetermined character of the motor schemata argue against this possibility. D. M. MacKay, the one theoretician of AI who claims that a robot's model of the external world must be stored as motor schemata, recognizes this point. He warns: “. . . We on the circuit side had better be very cautious before we insist that the kind of information processing that a brain does can be replicated in a realizable circuit. Some kind of ‘wet’ engineering may turn out to be inevitable” (D. M. MacKay, “A Mind's Eye View of the Brain”, in *Progress in Brain Research, 17: Cybernetics of the Nervous System*, [Amsterdam, 1965], p. 16). So far, the only entity which can meet these specifications is the human body.

describe the objective performance. But, as we have seen, being embodied creates a second possibility: an active, involved agent can build up skills and assimilate instruments as extensions of his body. Thus, an embodied agent can dwell in the world in such a way as to avoid the infinite task of trying to formalize everything.

Conclusion. The force of my argument, in so far as it is an impossibility argument, depends on the open texture of pattern recognition, the infinity of facts that may be relevant in problem solving, and the correlative flexibility of bodily skills. If experience really has this open character, then any *specific* human intelligent performance could indeed be simulated on a computer after the fact, but *fully* intelligent behaviour would be impossible in principle for a digital machine. This does not mean that some limited sort of artificial intelligence is impossible or even impractical. It remains an open question to what extent human performance can be simulated after the fact by finding rules to describe that performance and then programming them.

I have, however, shown several serious difficulties in current AI work which suggest that, whatever rule-like way of processing information may yet be found, present techniques are inadequate. To simulate the gestalt character of pattern recognition and problem solving on a digital machine would require, at the very least, the storage and easy accessing of vast amounts of data. Only in this way could the computer begin to simulate the use of past experience and present context to structure present experience, a process which seems to be necessary for any complex pattern recognition or problem-solving task.

No such data-processing techniques exist at present and, once the traditional philosophical assumptions underlying work in AI have been called into question, there is no reason to suppose that such techniques will ever be powerful enough to cope with the amount of data involved.¹⁸ In fact, it would be more reasonable to suppose they will never be. The human world with its recognizable objects is organized by human beings using their embodied capacities, to satisfy their embodied needs. There is no reason to suppose that a world organized in terms of the body should be accessible by other means.

¹⁸ There is no reason to take any comfort from the fact that human beings perform these remarkable tasks, since the body is certainly not a digital computer and the latest work in neurophysiology has produced convincing evidence that the digital computer is not an adequate model of the brain.

Social Anthropology and Natural Theology

John Beattie

(*Sir Alister Hardy's Gifford Lectures, 1964–65, Second Series, The Divine Flame, Lecture III.*)

In this series of lectures Sir Alister Hardy sets out to survey the main grounds upon which he believes that a “natural theology” will eventually be erected. By “natural theology” he means “a science of man’s religious behaviour”, and he argues that a study of such behaviour, combined with an examination of the assumption (now increasingly being questioned by scientists themselves) that the universe and its history can be wholly explained in material and mechanistic terms, provide “strong evidence for the existence in man of an element which, while linked to the material system, would not, at present at any rate, appear to be explained by it”. Thus, cautiously, the ghost is restored to the machine, and the possibility of a science of theology, at least in some sense of that term, is established.

Sir Alister is well aware that neither the ghost in the machine (in the sense of what a recent writer has called “a distinctive agent aspect of [man’s] selfhood which is irreducible to personality and which is thus by its nature forever hidden”¹), nor what he calls “a Power which is *greater than, and in part lies beyond, the individual self*” (Sir Alister’s italics), is itself accessible to observation or measurement. His natural theology must therefore centrally be a study of people’s religious ideas and behaviour. Souls and gods are not given as data, but what people think and do about them is, and such data can be and have long been studied.

This is where social anthropology comes in. In Lecture III of *The Divine Flame* (pp. 56–80), Sir Alister reviews a selection of anthropological writings, some of them very recent, with the aim of demonstrating that man everywhere “is conscious of being in touch with some Power which appears to be outside and beyond the individual self and from which he can receive grace : help in the conduct of his life and a sense of renewed vitality” (p. 80). This consciousness, he claims, provides “evidence for the divine in man”. I

¹ Douglas Browning, *Act and Agent: an Essay in Philosophical Anthropology* (Miami, 1964), pp. 2, 94.

here briefly discuss the evidence he uses, and examine some of the conclusions he draws from it.

With some apt references to recent writings by Evans-Pritchard, Lienhardt and others, Sir Alister starts by showing that modern scholars regard "primitive" religion as a complex and subtle field of enquiry which merits detailed investigation in its own right. The detailed information about the religious thought of pre-literate peoples made available by the intensive field studies of recent years has shown the absurdity of regarding "primitive religion" merely as a source for exemplifying crude and early stages in a presumed unilinear process of religious evolution. That was how most of the Victorian anthropologists considered it. But I think that Sir Alister is mistaken in supposing that modern anthropologists, "with a few notable exceptions, believe that religion can no longer be a valid subject for study" (p. 61). In fact most contemporary social anthropologists, whatever their private religious affiliations, if any, have given serious attention to the religious ideas and practices of the peoples among whom they have worked. Books by Douglas, Firth, Fortes, Geertz, Middleton, Nadel and Wilson, to name only a few, at once come to mind, together with a host of articles and contributions to symposia². Indeed it could reasonably be claimed that it is in the study of people's religious beliefs and cosmologies, and of their ritual and symbolism, that modern social anthropology has most advanced our understanding of other people's cultures. I refer to some of these fields of study below. In my view the personal religious commitments of anthropologists are less relevant in this connection than is sometimes claimed; it is not necessary, for example, to subscribe to a belief in ghosts in order to make a scholarly and sympathetic analysis of an ancestral cult.

Sir Alister then discusses Durkheim's famous study of the origins of religion, largely based on an analysis of the totemic practices of

² Mary Douglas, *Purity and Danger* (London 1966); Raymond Firth, *The Work of the Gods in Tikopia* (London 1967: second edition); Meyer Fortes, *Oedipus and Job in West African Religion* (Cambridge 1959); Clifford Geertz, *The Religion of Java* (Glencoe 1960); John Middleton, *Lugbara Religion: Ritual and Authority among an East African People* (London 1960); S. F. Nadel, *Nupe Religion* (London 1954); Monica Wilson, *Rituals of Kinship among the Nyakyusa* (London 1957). See also Daryll Forde (ed.), *African Worlds* (London 1956); M. Fortes and G. Dieterlen (eds.), *African Systems of Thought* (London 1965); John Middleton (ed.), *Gods and Rituals* (New York 1967). Recent articles are Jack Goody, "Religion and Ritual: the Definitional Problem", *British Journal of Sociology*, XII, 2, 1965, and John Beattie, "Ritual and Social Change", *Man*, 1, 1, 1966. This is only a very small and arbitrary selection of recent work.

some Australian aborigines.³ He quotes approvingly the celebrated French sociologist's conclusion that underlying religious behaviour is "the notion of an anonymous and diffused force", which people represent to themselves in various ways. Belief in this, Durkheim argued, cannot "be purely illusory", since it derives from the collective consciousness and so is ultimately social in origin. For Durkheim religion, certainly in its "elementary forms", is an essential expression of man's dependence on the complex system of moral imperatives, of reciprocal rights and obligations, which are in the last analysis what the notion of "society" implies. In stressing religion's expressive aspect Durkheim pointed the sociological study of religion firmly towards the investigation of symbols and symbolism (the "totem" of the Australian Arunta symbolized the social group). The symbolic aspects of ritual in the cultures they have studied have been a major concern of many contemporary social anthropologists.

Next to be considered is Marett, whose emphatic assertion that the "essence and true nature" of religion lies in a "steadfast groundwork of specific emotion" (religious thrill or awe) represents a line of approach very different from Durkheim's, and on the whole a very much less influential one. Though for both religion is a "fact", for one it is social, for the other psychological. There is of course no reason why it should not have both aspects.

Then Malinowski is perceptively presented in the unaccustomed role of defender of faith (if not of *the* Faith). Malinowski, who once described himself as the "arch-functionalists", asserted in his *The Foundations of Faith and Morals* that "religion fulfils a definite cultural function in every human society", since "it satisfies spiritual needs by giving man certain truths and teaching him how to use these truths". This is indeed a very long way from Malinowski's claim (for example in *A Scientific Theory of Culture*) that the theory of culture must take its stand on biological fact, that is, on the fact that basic physiological needs must be satisfied if people (and therefore cultures) are to survive. But, to do him justice, Malinowski did recognize that his theory of "basic needs" did not provide all the answers.

Sir Alister concludes his Lecture with extracts from recent studies of the religions of two neighbouring Nilotic peoples of the southern Sudan, Lienhardt's *Divinity and Experience* (about the Dinka), and Evans-Pritchard's *Nuer Religion*. Both of these peoples, who live

³ E. Durkheim, *The Elementary Forms of the Religious Life*, English translation (London 1915).

harsh lives in a sparse environment with minimal technologies, have highly sophisticated systems of religious belief, centring on a concept of extra-human Spirit, Divinity or Power, one yet manifold, to which (in its broadest sense) humanity is seen as standing in a relationship of profound personal dependence. As Professor Evans-Pritchard points out in his Preface to *Nuer Religion*, these religions are very unlike those of most small-scale, pre-literate societies about which we have information, and in this respect Nuer and Dinka seem to have more in common with the ancient Hebrews of the Old Testament than they do with their Bantu and other African neighbours to the south.

What exactly do the evidences from social anthropology, a selection from which Sir Alister deploys so skilfully, really demonstrate? The claims he makes for them are in fact three. He says that social anthropology provides evidence, first, for the divine in man; second, for the assertion that man everywhere is conscious of being in touch with a Power outside himself; and third, for the proposition that he can receive grace, help and "a sense of renewed vitality" from this Power. Let us briefly consider these three claims separately, for they are by no means the same.

If Sir Alister means by "the divine in man" that there is more to us than the physical material of which we are composed, his claim is certainly just. Like all other studies of human intelligence and behaviour, social anthropology fully supports the view that man is more than a machine. In the last resort no other view makes sense, even though, as we have noted, it may be difficult, even ultimately impossible, to specify precisely just what this "something more" might be. Studies of the thought of so-called primitive peoples amply show that man's awareness of himself as a conscious agent antedates his idea of himself as a conglomeration of material particles, whose behaviour is subject to ineluctable if not always readily discoverable "natural laws". Indeed in terms of human history such a view of man is a very recent one, and since such "laws" are at least in part the constructs of the human intellect, they can hardly be held to afford a complete explanation of man's rationality.

Recent anthropological studies have made it clear that the basic categories which the laws of Western science imply (or have until recently implied) are not the only ones in terms of which the universe can be intelligibly conceived. The American anthropologist-linguist Benjamin Lee Whorf argued, from an analysis of the language of the Hopi people of Arizona, that their culture lacks the substantive categories of time and space, as somehow real and

distinct entities, that have been the stock in trade of Western thought for the past two thousand years. Instead, they think of these qualities in relational terms; as aspects of things not as "things" themselves.⁴ And the Belgian priest-anthropologist Father P. Tempels, in his study of the thought of the Baluba of the Congo, has argued that for them the notion of being or existence is essentially one of power or spirit, of which man's personal identity, like everything else, is a manifestation.⁵ Marshall McLuhan has recently claimed that members of pre-industrial and non-literate societies are better equipped to cope with the new electronic age than members of modern, industrialized cultures, which are committed to a now outmoded mechanism.⁶ The anthropological study of "primitive" thought would certainly seem to lend some support to this claim.

It is certain that the members of all societies known to us have a concept of the self or "soul", though it may be very differently represented in different cultures. It is conceived as being in some sense independent of the body it occupies, and always it is endowed with at least some measure of autonomy. This is so even though in some cultures it may be thought that there are persons who lack this quality, for example small infants, or who possess it only in diminished quantity. Anthropology, then, would support the view that the idea of an immaterial quality or aspect of human identity is universal.

As it stands, Sir Alister's second claim is a little ambiguous. Clearly it is an essential aspect of the human condition to be conscious of a force, or forces, outside oneself; so far as I know there has never been a society composed solely of solipsists. Everyone, especially if he lives in a small-scale peasant culture at or about the subsistence level, is aware that he and everybody else are dependent on a great many external forces, both physical and (as Durkheim stressed) social. For the social anthropologist the interesting questions are how, in particular cultures, these forces are represented, and what is done about them. Most of them are all too obviously beyond men's physical control. So, since they cannot be dealt with by practical, empirically grounded means if they are to be dealt with at all it must be through symbol, myth and ritual. If the powers concerned can be represented as in some respects (though not in all) like people (or "super" people), then they can be dealt with, on the ritual plane, on a pattern analogous to human relationships, that is, by supplica-

⁴ Benjamin Lee Whorf, *Science and Linguistics* (Washington 1952).

⁵ P. Tempels, *Bantu Philosophy*, English translation (Paris 1959).

⁶ Marshall McLuhan, *Understanding Media* (New York 1964), pp. 39-40.

tion, invocation, and symbolic gift-giving or sacrifice. The study of the religious beliefs and practices of pre-literate peoples, equally with the study of the great world religions (and, of course, of the classical theogonies of Greece and Rome), provides innumerable illustrations of the many forms under which such extra-human powers can be and have been represented. Recent as well as earlier anthropological writings provide detailed accounts of a variety of nature gods and spirits, of "high" gods, of ancestral cults through which the basic moral values of a community may be expressed and re-affirmed,⁷ and also of the ways in which the new and inimical forces of social change may be "spiritualized".⁸ Many detailed descriptions are available, also, of the symbolic and ritual procedures by means of which these powers may be dealt with; these include prayer, invocation, sacrifice, and, very widely, cults of spirit mediumship.

But as well as involving the notion of influencing external powers on, as it were, a "man to man" basis, ritual procedures may be thought to be capable in themselves of enhancing (or diminishing) the power or ritual force of their practitioners, and of others. Anthropologists are familiar with such themes as the ritual killing of subjects to "strengthen" the king, and the Polynesian concept of *mana* as a power, dangerous to commoners, which inheres in chiefly office (among other things) and which can be increased or reduced. The widespread notion of pollution as a diminution in what Radcliffe-Brown called ritual status—though it is conceived as a positive force as well—affords a further instance of ritual's importance in the context of what Mary Douglas has called "a particular class of dangers which are not powers vested in humans, but which can be released by human action".⁹ And the notion that the special powers of prophets, diviners and other kinds of ritual experts can be increased by the performance of certain non-rational activities (wandering in the wilderness; the performance of certain normally forbidden acts, of which royal incest is a notable example) is also widespread. As Dr. Edwin Smith has put it, "the symbol melts into the talisman",¹⁰ and the modes in which it does so are of interest both to psychologists and to social anthropologists.

It is becoming increasingly clear, too, that much therapeutic

⁷ Cf., especially, Fortes, *op. cit.*

⁸ For an African case, cf. J. H. M. Beattie, "Group Aspects of the Nyoro Spirit Mediumship Cult", *Rhodes-Livingstone Journal*, 30, 1961.

⁹ Mary Douglas, *Purity and Danger* (London 1966), p. 113.

¹⁰ Edwin Smith, "African Symbolism" (the Henry Myers Lecture), *Journal of the Royal Anthropological Institute*, 82, 1952.

ritual does in fact have positive psychological and even physiological effects on the participants, though this field, which straddles rather uncomfortably the borderlines between medicine, psychology and sociology, has not as yet received the attention it deserves. There is however some evidence that the magician who pretends to suck from the flesh of a patient a bone, grub or other object believed to have been placed there by a sorcerer in order to make him ill, or, still more, the medium-diviner who dramatically persuades an evil spirit to vacate the victim whom it has been tormenting, does in many cases effect a cure. At least some illnesses are in the last resort matters of conscience, and the relief, through an often strenuous ritual drama, of an intolerable mental or moral burden may have profound effects on the sufferer's whole being. This is a fact of which primitive medical practitioners, even though they are unacquainted with the Aristotelian doctrine of catharsis, are by no means unaware.

But recent social anthropology goes further than classifying symbols and symbolic behaviour and their real or presumed effects. With the increase in intensive field studies, based on an intimate knowledge of the people studied and of their languages, combined with more sophisticated types of analysis, there is a growing body of information about the cognitive categories of pre-literate peoples, their ways of thought. I referred above to some of the basic differences between the ways in which simpler peoples may conceive their worlds, and the ways in which members of literate Western cultures may do so. There are major differences also, as well as striking similarities, between the ways in which different peoples organize and classify what they observe. Like their fundamental categories, their classifications are sometimes implicit rather than explicit in the minds of the people who have them; thus they are often only fully accessible through intensive field study.

Much important work has been done in recent years in the field of what used to be called "primitive classification". Some of it was foreshadowed early in this century by the work of members of the *Année Sociologique* school in Paris and their successors, but undoubtedly the most celebrated contemporary exponent of this approach is the French anthropologist Claude Lévi-Strauss. His work, initially on the structure of myth among some South American peoples, and then, more broadly, on a trans-cultural scale, is concerned with certain fundamental principles of classification, and has been profoundly influential.

Following in the tradition of the *Année Sociologique* school, he has explored the many ways in which people have ordered and classified their world, often in terms of such symbolic opposites as

right and left, male and female, pure and impure, raw and cooked, and so on.¹¹ These studies have greatly enriched our comprehension of the subtleties of “primitive” thought, indeed of all thought, though here, as elsewhere, there is sometimes a tendency to impute to the people being studied a more highly formalized system of category oppositions than they really possess.

But let us return to our “powers” and spirits. Sir Alister is certainly right in claiming that the anthropological evidence fully supports the view that man everywhere has peopled his world with “spiritual”, quasi-human powers, outside and beyond, and yet at least in some respects like, himself. Whether or not we can say with Sir Alister that they are “conscious of being in touch” with such a Power (with a capital P) or powers depends upon whether we take consciousness of something to imply that that “something” exists, in the form in which it is conceived. Through their ritual and symbolic dramas men are indeed expressing their contact with, and awareness of, something, for ritual is an assertion about reality, not just about itself. But the question what, in the final resort, that “something” essentially is, is one which social anthropology, like all other empirical sciences of man, must leave open.

Most social anthropologists would, I think, wish to enter at least some qualification to Professor Hardy’s third claim, that man everywhere can receive grace, help, and a sense of renewed vitality from the Power or powers upon which he conceives himself as dependent. Where there is a conception of a High God, he is often thought of as otiose. After creating the world he withdrew from it, sometimes in disappointment with his handiwork, and concerned himself no more with the world of men. The Nuer’s preoccupation with “Spirit” in its most abstract and extended sense is probably unusual in “primitive” religion; in most cultures men in their daily lives are more concerned with lesser spirits or powers, whether these are conceived as discrete and distinctive beings, or as, in some sense, “refractions” of the supreme Spirit. Further, where a multiplicity of spirits or “powers” is postulated, these are by no means always thought of as sources of grace, help or revitalization: often they are conceived as inimical rather than beneficent, and man’s principal concern with them is rather to avoid their influence than to achieve closer union with them. Evans-Pritchard himself has stressed the apotropaic motif in Nuers’ feelings about ghosts, and similar

¹¹ Cf. especially Claude Lévi-Strauss *A World on the Wane* (trans.) (London 1961); *Structural Anthropology* (trans.) (New York 1963); *The Savage Mind* (trans.) (London 1966); *Le Cru et le Cuit* (Paris 1964).

attitudes are found in many other cultures,¹² In many, perhaps in most, cultures these two sides of spirit's relationship to man may be said to complement each other; though in some spirit's dangerous, threatening aspect is the most stressed, in others (though I think fewer, and mostly in the more advanced religions) the emphasis is on the loving, beneficent aspect of the non-human spiritual realm. It is probable, and so far Sir Alister is almost certainly right, that in no culture is the benevolent aspect of spirit entirely absent, even if, sometimes, as among the Nyakyusa, it exists only in the sense that spirits can confer benefit on men by leaving them alone. But to represent man's idea of Power or spirit as wholly benevolent, an unflinching source of grace, help and renewal, would be to paint only half, or an even smaller fraction, of the total picture.

I do not think that these considerations substantially affect the force of Sir Alister's main argument, though they do suggest that there is a darker side to the man-spirit relationship than he implies. It is not surprising, perhaps, that in the conditions in which these beliefs must have originated the dangerous, threatening aspects of the spirit world should be the most stressed. Man's natural environment has almost always been inimical rather than kindly, and the spiritual agents through which it was conceptualized were bound to express pre-eminently these inimical aspects. Thus most often they were to be avoided, or at best propitiated, rather than loved. Sir Alister has well shown that recent detailed studies by social anthropologists indicate the universality of a belief in a God or gods, and of a conviction of man's dependence. If these studies also tell us a good deal more about the darker sides of "primitive" religion than Sir Alister refers to, what he has selected is adequate and relevant to his purpose.

¹² Cf., for example, Wilson (*op. cit.*), p. 204: "The aim of Nyakyusa ritual is not that union with God constantly sought in Christian ritual, but a separation both from the shades and the heroes; for close association with the pagan gods spells madness and death, not fullness of life".

Towards a New Anarchism?

Frank Rendall

“Syndicalism”, Beatrice Webb wrote in 1912, five years before the October Revolution, “has taken the place of old-fashioned Marxism”. “The angry youth”, she added in a tone of middle-class superiority, “with bad complexion, frowning brow and weedy figure is nowadays a syndicalist; the glib young workman whose tongue runs away with him mouths the phrases of French syndicalism instead of German social-democracy”.¹

Beatrice Webb’s tribute to the strength of libertarian socialism in Edwardian England found an echo last year when David Ben-Gurion told the journalists who interviewed him on his arrival in the States that he had met his wife in New York and that she was then an anarchist. But, he pointed out, “in those days almost all New York intellectuals were anarchists”.

And it so happened that about the same time as the former Israeli Prime Minister was recalling the great days of American anarchism, the *New York Times* published a number of reports that brought back similar memories—and in my case, set in motion the train of thought that led to the present article. The ghost of the Industrial Workers of the World, I learnt, had finally expired with an application by the last surviving “Wobbly” union among the miners of Colorado for membership of the American Federation of Labor—thus completing the process whereby the dear old I.W.W. was swallowed by its offspring. And Miss Frick was unsuccessfully asking the courts to suppress a frank biography of her father whom in 1892, at the time of the great Homestead lock-out, the anarchist, Alexander Berkman, had tried—equally unsuccessfully—to assassinate.

Alexander Berkman, long virtually forgotten with all his dreams of glory and sixteen years’ imprisonment; Emma Goldman who horse-whipped poor twisted Johann Most for denouncing her lover’s attempt at tyrannicide, still just remembered for an autobiography, *Living My Life*, which is among the most entertaining works in the literature of revolutionary socialism; both of them retiring in despair to bed in their dingy Moscow hotel when Trotsky turned his guns on the Kronstadt sailors and ended anarchism as an effective

¹ Quoted by James Joll, *The Anarchists*, p. 223.

international movement (though the mutineers were for the most part no more anarchist than the Polish fanatic who killed President McKinley)—it all suddenly came to life when I read a brief paragraph to the effect that, half a century later, the New Left in American universities were holding a conference on a subject which anarchists have been debating since the days of Bakunin, how to infiltrate the establishment (which is more or less what anarchists mean by the State), identify its weak points and wreck it from within.

Now there have of recent years been some good books on the history of anarchism. It may well be therefore that among the New Leftists there were those who had read a little potted Proudhon and Bakunin as well as the Communist Manifesto and the selected Marxist-Leninist texts prescribed for their course in politics. And, despite the comic side—always more stressed in the case of Bakunin and his followers than in that of Marx—I dare say that some of them had observed that they were reading about men whose approach to the problems of society and of authority was in many respects barely distinguishable from their own. One or two might even have dipped into the odd number of *Freedom* or glanced at an anarchist tract.

I doubt, however, if the black flag of anarchism, that flies so bravely whenever our own protesters march to Aldermaston or demonstrate against the war in Vietnam, was much in evidence when the bourgeois heirs of Beatrice Webb's angry young proletarians met to discuss a theme that could hardly have been more exquisitely anarcho-syndicalist—any more than it is in evidence when Stokely Carmichael or Rapp Brown justify Black Power with arguments that could be summed up in the old anarchist thesis of "propaganda of the deed": or when the hippies of San Francisco and New York parade their libertarian views by holding a love-in in a public park. For, despite the obviously anarchical tendencies of its whole protest movement, America has not, as far as I am aware, experienced even the modest revival of political activity by organised groups of professing anarchists, and of interest in theoretical anarchism, that has taken place in this country of recent years.

Is there then any justification for suggesting a line that goes from Godwin to the American libertarians of today—less perhaps by way of out-and-out anarchists than *anarchisants* like Huxley, Orwell, Camus and even Sorel and Tolstoy? The difficulty of course is that—anarchism in the sense of a preference for un-rule rather than rule being as old as human society—there is no means of telling

what difference it would have made to the prevalence of anarchical sentiment today if nobody had tried, in books that are no longer read outside the narrow circle of the surviving faithful, to turn these vague aspirations into a coherent system: even Sartre cannot know what would have been the effect on the views he has recently published about violence, if Bakunin had not anticipated him in preaching its virtues.

Indeed, I can think of only one channel through which a particular anarchist work, as opposed to a mainly submerged anarchist tradition, may have fed (albeit indirectly) the stream of contemporary dissent. If Aldous Huxley and his Californian coterie contributed more to the origins of hippyism than the advertisement of mescaline, then (as so often happens) up pops the bizarre figure of Max Stirner, the nineteenth-century school teacher and prophet of "individual" anarchism, who was re-discovered by the Futurists in the 'twenties and provided not only the sages of the early Huxley novels but Gide and Camus with some of their more original thoughts. And even if it is unlikely that Félix Fanon, the theoretician of both brown and black power, has read Stirner, he is certainly familiar with Camus.

But who nowadays would want to read as pretentious a work as the *Ego and its Own*? In any case, the leaders of the Black Power movement are interested in deeds rather than words; and if hippies read at all before going on a trip, they would, I imagine, prefer a book about the equally cloudy Indian philosophies that have provided the flower children with most of their symbols. For anarchism, like other forms of socialism, accepts the basic tenets of the society it rejects—that action is better than non-action, possession (if only by the community) than non-possession, and order (self-imposed of course) than disorder. And even as determined an *immoraliste* as Stirner founds his plea for self-gratification on a solipsism that is alien to the friendly gregarious world of the hippy, the peace-marcher and the looter.

Yet the roots of anarchism in America run deep. The home-bred variety could indeed produce no worthier representatives than a very provincial Godwin in the person of Benjamin R. Tucker and a not very inspiring Proudhon in the person of Josiah Warren with his mutualist ideas on the subject of banking (unless a literary escapist of genius like Thoreau may be counted an anarchist); and the only manifestations of anarchism in action—the utopian socialist colonies that once proliferated in the American countryside and still provide students of folk-history with subjects for their Ph.D. theses, were ignored by anarchists: they were in any case a

poor substitute for the ancient peasant communities that inspired so much of European anarchist thinking.

But even Jeffersonian tradition may be regarded as anarchism on a solid basis of slavery² (as hippyism may be regarded as anarchism on the basis of the welfare state). And however absolute the priority that is given in practice to the material interests of the country, the American outlook is still characterised by an *anarchisant* suspicion of authority in general and large-scale capitalists in particular and by a belief in the natural goodness of man. Nor is there anything un-American about the violence to which even such high-minded anarchists as Kropotkin and Sir Herbert Read retain a sentimental attachment: in Rapp Brown's phrase it is "as American as cherry-pie". Revolutionary anarchism might be an alien import when it crossed the Atlantic in the 'eighties. But to a society, which had never found it easy to reconcile its humane and individualist traditions with the brutal facts of life in a progressively more centralized capitalist economy, it could offer a philosophy of extremism which was not only simpler and more direct in its appeal to the emotions than a hodge-podge of Hegelian and utilitarian thought like primitive Marxism, but provided a vision of something more immediate than a utopia in which, as Lenin once put it, every worker would sit on a gold lavatory seat.

Why then did anarchism after a promising start fail so completely in its competition with Marxism for the allegiance of revolutionary socialism both in America and elsewhere? Not, I think, basically for any of the reasons that are usually advanced, even by an anarchist like Woodruff in his recent history of the movement. There are defects in libertarian theories of all kinds, whether communist, individualist, syndicalist, Christian or what you will, but nothing on the scale of Marx's gross errors in economic and political analysis. And revolutionary anarcho-syndicalism, however impractical its syndicalist prescription in a country like nineteenth-century America, was more realistic than Marxism in being tailor-made for the only class that has a reasonable revolutionary potential in a modern state which manages not to get itself defeated in a world war—the *lumpenproletariat* and outcasts of society whom Marx despised and Bakunin idealized. Nor did the emphasis of anarchism on the individual necessarily inhibit efficient organization: as observers of the Spanish Civil War discovered, anarchists can rival Stalinists as ruthless party managers. True, anarchism in a country of aggressively Anglo-Saxon culture drew its recruits

² I owe this observation to my friend, Guy Wint of St. Anthony's.

mainly from the oppressed immigrant masses of the great Northern cities. Yet its most lasting impact was not on the garment-workers and manual labourers of the Eastern sea-board but on the mining communities of the West where (as in the Asturias) a long series of heroic strikes showed the effectiveness of a marriage between Bakuninist techniques and a native tradition of Frontier violence.

The decisive reasons for the failure of anarchism in America seem to me to have been rather : first, that the anarchist leaders, though they included some notable personalities, did not, *pace* Ben-Gurion, shine as intellectuals or even feel the need of attracting intellectuals (things might have been different if a man of Prince Peter Kropotkin's distinction—of birth as well as intellect—had chosen New York rather than London as his place of exile); secondly, that anarchism and Marxism had hardly got going in America before Sam Gompers was showing both factions that in an expanding economy you can do more for the workers by operating with than against the bosses; and, above all, it was the Marxist-Leninists who stepped into the breach when in 1917 the walls of Jericho, which had stood up to the trumpet-calls of subversive propaganda, unexpectedly collapsed under the stress of war. Thenceforward the Bolsheviks, with all the resources of a great power behind them, could appropriate the name of communists and organize an international communist movement which even its opponents would recognize as for all practical purposes the sole heir to the traditions of revolutionary socialism.

But perhaps the time is coming to revise this judgement. With the emergence of the *apparatchik*, Marxism-Leninism has become, for all its residual strength, as old-fashioned—and a good deal more repellent—a revolutionary creed than it appeared to Beatrice Webb in 1912. And even the most gradualist and milk-and-water variations on the socialist theme have lost much of their appeal; as an American professor remarked to me, it was odd to find that everything for which middle-aged liberals like himself had stood in their student days—federal intervention, the welfare state and so on—was now taken for granted or rejected by their own students. Classical anarcho-syndicalism may be dead beyond recall. Self-taught anarchists like the hippies may be not only anti-militant but anti-political and the most militant New Left students unlikely to go much beyond a little police-baiting. It is still true that the revolt against authority is in full swing among the elements of society where Marxist-Leninists have in practice found most of their support—the students and the unskilled workers. And the slums of decaying Northern towns are now inhabited by negro immigrants

who are a good deal readier than their European predecessors were to heed the call for action; even if their looting is sometimes done by automobile and they make for the colour television sets. All that is needed to produce a plausible revolutionary movement out of a gallimantry of individual protesters is the direction of a coherent and imaginative ideology and—in an age when without the State and the foundations even the cherished flowers of liberalism would fade—money.

It is here that I see the potential importance of the cultural revolution that an old Bakunist⁸ has launched among the 700 million people of a country that will become in the foreseeable future a super-power on the scale of the United States and Soviet Russia. Mao may allow himself to be described as the greatest Marxist-Leninist of all times and use anarchism as a term of abuse for those who want to carry the revolution too far. The fact remains that, as Soviet propaganda continually points out, Maoism has developed into a doctrine that stands more and more in the tradition of libertarian rather than of authoritarian socialism.

This is not only because Maoism, like anarchism which also struck its deepest roots in under-industrialized countries, differs from Marxism in its estimation of the role of the peasantry; nor because Mao, obsessed by the memory of the comradely days in Yen-an, seems to be bent on forcing a huge modern state into the mould of a primitive communist community, the prototype of which is to be the Paris Commune of 1871, whose origins were certainly more anarchist than Marxist. Nor even because much of Chinese life is already organized on quasi-syndicalist lines with workers, peasants, students and service-men allowed real latitude in criticising the management.

More important is the fact that Mao has stood Marx on his head by claiming that, as Bakunin maintained and Marx denied, politics are more important than economics, so that the super-structure controls the infrastructure and, for example, ingenious peasants armed with the thought of Mao Tse-tung can set about mechanizing agriculture without waiting for modern tractor factories to be built. And he has done the same service for Lenin by closing down education for a year and inciting schoolboys and students to

⁸ As Maurice Meisner has recently pointed out, such revolutionary socialism as had permeated to China before the October Revolution was anarchist rather than Marxist. Mao claims indeed to have been an anarchist only for a few months, though he admits that he had read Bakunin before he came to Marx. However, an early Chinese Communist account of the Party claims that of the eight founding members six, presumably including Mao, were anarchists; and the first congress of the Party was devoted largely to a debate between anarchists and their opponents.

“drag out” Party bureaucrats for public revilement. He has indeed justified his action in Marxist terms by proclaiming the un-Marxist, or at least non-Marxist, doctrine that during the dictatorship of the proletariat class-war continues inside the Party, with bourgeois influences continually seeping in. But this thesis is itself an implicit acknowledgement of the criticism which anarchists have always made of Bolshevism, that the system carries within it the seeds of inevitable corruption. And even if Mao’s solution of the problem of the New Class is original, he and his “revolutionary rebels” follow Bakunin in preaching the virtues of insurrection for its own sake; while there is at least a flavour of Sorel’s “revolutionary myth” about the Chinese argument that the Russians have been guilty of “disarming the masses” not because they have recognized American nuclear superiority in practice but because they have publicized this awkward fact.

There is of course a great deal in Maoist methods that is anything but libertarian, and any resemblances between the two approaches to the problems of authority and the State must be regarded as coincidental in the sense that Mao himself would repudiate any suggestion that he had reverted to the ideas of his youth. Nor is it yet clear what is the significance, even for the future of China, of a movement which may well have been set off by a “power-struggle” of the familiar Kremlin type and has been carried out with a shrewd eye to China’s vital interests in fields such as defence and production. And with Mao safely in his grave, the new leaders may be less attracted to the uneasy life that Mao envisages for the Party official—a life in which the rulers are continually exposed to the criticism, and periodically to the insults, of the ruled.

Nevertheless I believe that Western observers, fascinated by the *bizarries* of the cultural revolution, have under-estimated the importance of what is happening in China for the future both of communism and of extremist movements generally. The Chinese will of course have to become less dogmatic and more alive to the danger of becoming a laughing-stock in the world. But I read in the papers that the Maoists have already captured C.A.R.D., the organization which is likely to become the focal point of Black Power agitation in this country; and sooner or later the young men of Berkeley, and even of the London School of Economics, may become more interested in the fact that there is a country in which Student Power is already a reality. For, with all its extravagances, Maoism is not only perhaps a less dangerous tonic for a regime that has lost its vitality than the half-hearted liberalization that is

already landing countries of the Soviet bloc in difficulties; it has also, unlike Marxism-Leninism at least some relevance to the problems of a Western technological state, where discontent centres on the deficiencies of a "system" which is based on the principle that the Chinese call "economism", i.e. the heresy that for the building of a new society, material incentives are more important than political ideas.

When he died in March 1921, after three years of bitter disillusion in his native country, Kropotkin was engaged in writing a letter to the workers of the world. After denouncing the crimes of the Bolsheviks, he went on to appeal to anarchists not to support the White invaders or forget that the Bolsheviks had at least the merit of having made a clean sweep of the old order. He concluded his draft with a moving passage in which he predicted the ultimate triumph of anarchism on the grounds that freedom succeeds oppression as inevitably as one wave succeeds another. His prophecy was perhaps not entirely off the mark, even if Maoism was not exactly what he had in mind, to the confusion of E. H. Carr and the determinists, for whom the course of revolutionary socialist history had seemed so clear—from Marx to Kosygin rather than from Proudhon, however deviously, to Mao.

News from California

Yorick Wilks

(i) *Peeling the Strip (Easter 1967).*

Sunset Strip is a stretch of a mile or so of the twenty mile Sunset Boulevard and is an anomaly even in Los Angeles, that triumph of non-planning. It developed as a refuge for strip clubs, fashionable night clubs and restaurants outside the restrictive supervision of the cities of Los Angeles and Beverly Hills. When the old Hollywood glamour tarnished, a new injection of money into the Strip was needed, and so the Los Angeles County Board of Supervisors granted licences to a number of teenage dance clubs serving soft drinks, and to the periphery of coffee houses that sprang up round them.

There was nothing very remarkable about that; it was the pattern of every large occidental city in the last ten years. It is what happened next that is strange. It has been the scene of a great battle, and of a victory for the Los Angeles Police Department and Governor Reagan.

The night clubs began to suffer from the competition from the teenagers: prospective customers would come to the Strip not to see the bunnies but simply to watch, from their cars, the hordes of teenies on the pavements, and all for free too. Even the hardest ("AMATEUR STRIP CONTEST EVERY SUNDAY NITE") found that there was nowhere to park because of the kids and their traffic-jamming audience. Something had to be done, and last November the Supervisors revoked the licences and the police cracked down with the sudden revengeful violence that marks the western and southern United States.

The Strip was swept by the City Police from the east and by the County Sheriffs moving from the west. The meeting point of their jurisdiction was Pandora's Box, a dance café that became an embattled, and now derelict, symbol of all that followed. The main legal weapon of the police was the curfew law which says that persons under eighteen must not loiter on the streets after ten at night. The key word was "loiter", though what the police did was to arrest anyone they chose who was in public at all, even while going from a dance hall to a car. They compelled pedestrians to

identify themselves by driving licences, school cards or the curious document issued by the police to those who have missed the puberty rite of getting a car and a licence. They continued to do this even after the state Supreme Court had decided that a person was not obliged to identify himself to the police without due cause. All this was enforced by peculiarly unpleasant methods; searchings, roughings up, being bent backwards over the police car bonnet so that one's eye and hair colour could be seen under the searchlight—their favourite technique, often photographed, being to grasp a youth or girl from behind by means of a billy club held across the throat.

Most of the city's population are behind the police whatever they do—didn't they put Reagan into office to clean up the sex, drugs and protest of the young, both on and off the campus? It is hard to know how much drugs and sex there are actually about, largely because of a natural American preference for epiphenomena; for talk about drugs and sex rather than for the things themselves. What is known is that statistically there is no more crime among the young than among any other age group, and it is that fact that makes it so hard to understand why, in a state with twice the national crime rate, the police spend so much of their time hammering morals into the young, and why they are so widely supported by the public when they do so? Perhaps the Rousseauian beliefs entombed in the Constitution, that a man is born not only free but good, can be seen at work in the parody American household—a household dominated and bullied by a child of eight years upward. But once the same child can be thought of apart from the home, and as part of an abstract entity called Youth, then comes the moment for parents to revenge, through their well-armed police force, all the indignities and humiliations of years.

It is vital to distinguish two elements in the crowds that milled the Strip. Most were *teenyboppers*, kids under eighteen and only slightly dowdier than their English contemporaries. Were it not that in a few years half the population of Los Angeles will be under twenty-five one would call them an oppressed minority, for oppressed they certainly are; under the curfew law, not able to drink until they are twenty-one, discouraged from dancing in central Los Angeles, and by law raped if they seduce anyone over eighteen or vice versa. The older group are the *hippies*, long-haired, eccentrically dressed, living away from home, and generally not working but sleeping by day and spending the nights in the coffee houses. Like college students they are a leisure class, indeed they could only exist in a society that sent over half of its youth to college rather than out to work. But hippies are not simply drop-outs, they are

a distinctively Californian phenomenon and in some kind of apostolic succession to the San Francisco beats of the '50s. The far-eastern religious overtones are there, but dress and music have livened up and LSD has replaced pot as the cult object.

Acid trippers seem to have little of the interest in, say, kinetic art or concrete and typographic poetry shown by their equivalents in England and Germany. In this they exhibit the supremely American desire to go straight to the content or meaning of things, and not trouble over much with form. One might have hoped for a more consciously McLuhanite attitude in this city that sees itself as the first city of the future. But one McLuhanite mark they do show; the retribalization of modern society. The most conspicuous demonstration of that so far was the "Love-in" on Easter Sunday, which attracted some 20,000 hippies to Elysian Park and is claimed as the largest pagan celebration in the West for thousands of years. It began at dawn with mantras and a recital on a carillon of bells and brass gongs mounted on an enormous portable frame. Contemplation became more active as pop bands began to play on a raised stage. They continued right through the day and then on into the night to the accompaniment of the obligatory light-show which was thrown on to a sheet sail. Timothy Leary sat for most of the day under one of the giant ankh symbols that had been set up on the floor of the valley that was still, officially, picnic area 5, but most people walked about all day, ringing bells, carrying burning incense, giving away small gifts of food that they had brought, or simply being nice to each other. A couple making love—or pretending to, no one seemed quite sure which—drew a fair crowd and a warm round of applause at the conclusion. Dress, face-painting and personal decoration ranged from amerindian through medieval to pre-raphaelite and boy scout. The police stayed well to the perimeter of the valley but made it quite clear that they didn't like what they could see.

The whole Jamboree grew from the "be-in" of the San Francisco flower children, and its huge success represents the triumph of what one might call the passive, contemplative, drug-cult aspect of hippie life, and the end of the brief period of protest that followed the Sunset Strip riots. To put it another way, it represents the renewed hegemony of San Francisco over what was, briefly and uniquely, Los Angeles. The melées of last autumn led on to a variety of protests both on the Strip itself and in the self-styled underground press. In all this the hippies took the lead. The centre of protest on the Strip became Al Mitchell's Fifth Estate coffee house, on whose outside wall the owner paints a fresh six-

foot slogan each week or so. At present it reads "POLICE REFORM NOW" and tells one that an official of the American Civil Liberties Union is inside prepared to take details of specific complaints against the police. It was there that the February marches against police brutality were planned, and the police are still taking their revenge for that. Usually they just harrass the café's customers, barging in and demanding that they identify themselves. On these occasions Mitchell hands out small printed cards which apologize for the officers and end "Please bear with us". Last month the police went further and arrested Mitchell on a charge of statutory rape, but he had a good lawyer and was out of their hands in two days, the charge being quietly dropped.

The other main centre of protest is the weekly Free Press whose circulation has gone from 5,000 to 36,000 in a little over two years. Compared with, say, the Village Voice its tiny mind about art is in the best Los Angeles tradition, but otherwise it steers an interesting middle course between the protest and the psychedelics. One week it carried a long feature on smoking dried banana peel ("Mellow yellow—the way of getting high that the police can't ban") and another in a long series of theological articles on whether or not one should ever "come down" after an acid trip. The same issue also carried excellent features about the New Politics candidates in the local elections, the condition of California farm workers who are still paid less than the national minimum wage, and homosexual law reform.

It is over now, and everyone is relaxing and being nice to everyone else. The Governor has done another good job, and everyone knows that if you've a smart car, cut your hair and give no trouble, the police are just regular guys.

(ii) *The passing of Messianism* (October 1967).

The messianic aspect of the drug cult has already folded up. That doesn't mean that there won't be a steady increase in the number of people (especially middle-class people) taking marijuana regularly for pleasure and relaxation.

Only this month an elderly lady school-teacher in Marin County was fired after many years' excellent teaching for admitting (on behalf of someone else) that she had taken marijuana regularly for ten years. What it does mean is that the vanguard who proclaimed mind expanding drugs as vehicles of a new religion are shutting up shop. In social terms it means that the psychedelic hippie is yielding to the protest hippie. Haight-Ashbury in San Francisco is emptying to the enormous relief of the Sanitation and

Public Works Departments. Those that are left are just straightforward teeny-beggars, and, in this country at least, it's highly unlikely that a beggar is a holy man too.

In that respect I imagine the situation differs from the U.K.: I have little information about the movement there but it seems probable that it will last longer, for although the pop-culture superficialities are similar in the two countries, I think the social realities are different. America is repoliticizing for the first time since the thirties, while England is depoliticizing as the British newspapers fill up more and more with news of the "home country" (i.e. the U.S.). Whatever the causal relations involved, outbreaks of mystical feeling seem to come with de-politicization and the end of empire (cf. Roman fifth-century, and Church thirteenth-century empires). There are four possible reasons for this flow of energy from the psychedelic-hippies to the protest-hippies.

The drug cult has no real leaders (and certainly no martyr as the protesters have in Lenny Bruce). Tim Leary never quite made it as guru-in-chief—partly because he was so clearly making a lot of money out of the whole thing. The Beatles' guru, Maharishi Mahesh Yogi, is of course against drugs as such—though he offers the same benefits in what might appear to be more traditional ways. But I think his brief lecture-tour popularity is over, and that he's now effectively exposed as a fake. The kids—like the nineteenth-century agnostic—will not tolerate wicked gurus or wicked gods. It's not his quietism about the world's plight that they mind so much—Jesus had much of that, and haven't Indian holy men lived with caste system for millenia—it's the Maharishi seems actively to aid and abet the system. Rather like George Brown, who *doesn't seem to suffer enough* as he supports Johnson's foreign policy, he actually seems to want to. What importance the Maharishi has rests entirely on the fact that the Beatles chose him, just as Rasputin's fame as holy man rests only on the fact that the Romanoffs took him in.

Psychedelic cultists have produced no insights, nor have they produced a single work of art on the de Quincey or Coleridge level, nor even on any of several lower levels. Moreover, they've gone no way to answering what one might call the "Huxley Question": "Do some drugs have the same effect—produce the same experiences—as mystical exercises, and even if they do *should* one achieve those experiences that way?"

Apart from a few living on a brown rice diet, and many who try hard to smile at strangers in the street, I know of no one of them making any traditional kind of effort. There are, it is true, a

growing number of pretty permanent hippie communities further up the coast, but I know little about them.

There is increasing acceptance of the fact that most of the “mind expanding” drugs (other than the innocuous marijuana) *are* dangerous. This is true of LSD, STP, methedrine, wildwoodrose, glue for sniffing, and our old friends cocaine and morphine. That this is true of LSD is a big disappointment, particularly to the “Neo-American Church”, whose sacramental substance it is. They have taken a sudden and natural lurch towards Manicheanism on discovering the unfairness of a world where such a mind-blower also wrecks the body’s chromosome structure.

There are too many “cop outs”, and these of three kinds, commercialism, gangsterism and amateurism.

Commercialism. Many hippies are making fortunes out of other hippies :—Chet Holmes’ “Family Dog” commune in San Francisco has an annual turnover of over \$275,000 from the sale of posters, dances and stroboscopic light shows. Some of the best ex-hippie pop groups are doing radio commercials for reactionary companies like Levi jeans, which still pay less than the federal minimum wage to their workers and sack anyone who tries to organize a union.

Gangsterism. The big operators and the Mafia are taking over the drug traffic, and hence the peculiarly nasty murders of hippies in San Francisco this summer. Again, the police managed to get members of one nationally popular San Francisco group called the Loving Spoonful to set a trap for another hippie they wanted on a drug charge. As a reward the police agreed not to prosecute the members of the group on another drug charge.

Amateurism. The Digger’s Creative Society (an interesting group between the psychedelic and protest, which feeds, clothes and gives medical aid) revealed recently that of the thousands of free meals they served in Los Angeles this summer over half went to part-time hippies who had driven down from Beverly Hills, parked their large cars and changed into ragged clothes to pad up and down the Strip.

All these things spread disillusion. I realise that all these points could have been made about the Christian Church at times in its history—lack of leaders, conformism to the social standards of the time, gangsterism, etc. But there was in it some core belief or practice fit to survive. In the new California covenant there is none and everyone is beginning to notice the fact.

Go East, Young Man?

Richard Saumarez Smith

Here am I sitting in a back garden of Cambridge, rationalizing about drugs and the Flight East. Drugs I know a little about, having taken marijuana more or less continually over the period of a year. But the Flight East remains a symbol to me, symbol of my own search for self-enlightenment and peace of mind. I know nothing of the specific clauses of Eastern religions which beckon people, and I doubt whether I shall ever actually make the Himalayas, unless as an anthropologist interested in the peculiarities of the Sherpa kinship system. But that is immaterial to the purpose of this essay, which is to project my own feelings about drugs and the Flight East onto you, the reader. It is for you to draw what conclusions you may.

I am a student sitting in a garden, not actually moving anywhere. My only movements are in the mind and are pretty tortuous at that. I am passive, non-participant; as a fruit hanging in a tree waiting to be plucked : I know that no one will come, for I'm in bad shape, and even if they did I should feel I were being pitied. Don't ask me what reality is: sometimes it's dreams; sometimes concepts; sometimes the slats of a fence. It's all deck-chair reality: was it me that kicked the fence or the fence that kicked me? Inactivity, without effort, without direction. These three things just about indicate my views of the universe, as a result of drug-taking.

If I were to presume to list a whole lot of causal connections between drugs and the Flight East, I feel that I should be led to the conclusion that we live in the year 1967 and that East is not West. That is to say that the two phenomena—drugs and the Flight—are only part of the total phenomenon of contemporary, Western existence. The expansion of technology and world-communications are the mark of our time. Everybody's going places and nobody's anybody before he's been. Nevertheless, as even our clear-headed priests keep saying, there is a great deal of social unrest, and I think that my unrest is only part of society's unrest.

You don't like to feel yourself part of this society; you want to be extraordinary, unique; you feel that your whole personality is in danger of being submerged in the vast impersonal machine. Society is a comet moving faster and faster in a vacuum, burning itself out.

As T. S. Eliot puts it:

**They all go into the dark,
The vacant interstellar spaces, the vacant into the vacant,
The captains, merchant bankers, eminent men of letters,—et al.**

Cold the sense and lost the motive of action. You don't want rules handed out to you before you've decided which are the right rules to follow. Flower Power and Love: it shows something about our society that such a large group of youth saw fit to take the word and make a slogan out of it. Everywhere push, move, scrabble, what *are* we? Damn biologists and their naked apes, psychologists and their categories, anthropologists and their impartial, scientific observation. Who wants to know why, how, whence we came to be what we *are*?

**And you see behind every face the mental emptiness deepen
Leaving only the growing terror of nothing to think about.**

I climb on to my motor-bike and rush around, but it's no catharsis, only an active kind of passiveness.

I believe that one function of religion is to take you out of the social plane on to the spiritual, to free you from your environment as much as from yourself—if you like, to give meaning to your existence. Yet how can it if the universe is as meaningless as I believe?

Christianity is too socially orientated. It appears to offer only a set of rules for becoming a good member both of the society of the Church and of Western Society generally (since it's Christian). I am sure that the following of these rules might lead to enlightenment, enlightenment by right deeds and right actions. But this carrot of personal enlightenment is hidden under a mush of social obligations. By following the rules, I should be involving myself in a society of which I want no part. I want a more "personal" religion. Eastern religions not only say that they are exploring the world of the soul, but they appear to know more about that world: according to Hindu thought, Raja Yoga, enlightenment by right deeds and right actions, is *one* of the different kinds of yoga which may lead to enlightenment.

Of course I want to be good to my neighbour, but not mechanically good. Turn on the switch of religion and churn out goodness. Sunday's the social day, wear my best hat, drinks at 12.00, "I must say it does us all so much good to be told we're worms". It was no accident that Maharishi Yogi said there was no one in the West to whom the Beatles could turn : of course there was no one, they were sick of the whole set-up. Nor must we forget the assertion of Mick Jagger, that a person is free to do what he likes with his conscious-

ness. When the reality of every day seems so meaningless, it's no wonder that people take drugs to "transcend reality". The consciousness is the only thing we have left which is our own. This is exactly the point: mechanistic society vs. personal freedom.

The pity comes in equating geographical East with spiritual salvation, and in not realizing that *all* societies have an underlying religion, not just Western society with Christianity. Thus, if your dislike for Western, mechanistic society has caused you to turn towards Eastern religions to seek personal enlightenment, you may conceptualize the society which goes with the religion—arrive in India unwashed, unkempt, unfed (but grooving), and be kicked out of the temples. (Perhaps that's when you jolt out of your deck-chair reality.)

I am heaping the blame for my own predicament of insecurity and unreality on to Western society, so it's not surprising that I want no part of it. In the same way, if I were afraid of becoming mentally unstable, nothing would induce me to go along to the mental hospital to be rehabilitated into the very society which was the vehicle for my instability. Treatment of criminals is even worse, since, whatever may be said about their moral rehabilitation, they are punished for their wrong-doings, whereas patients are cured of their diseases; being carted off to Australia was far better than being incarcerated in a monosexual institution, away from any healing society.

* * *

So you don't like the set-up, but have to remain in it because you're a student and you have to be educated. Consciously or unconsciously motivated, you take drugs, become an outsider of one society, but an insider of an even worse one, a clique whose values are in terms of their own image, of cool and hip. The coldness and distance are terrifying—although not surprising if you consider that the drug is a depressant. You come into a room, take your seat in the circle without a nod or a flicker on anybody's part, and wait to be turned on. Sometimes you're lifted, if you're not too pre-occupied with yourself; other times you sink lower into the black depths of depression; but either way, it's an artificially induced escape from one sense of being to another.

Of course, you needn't be worried by the conflict, you may not be concerned with yourself at all. If you can see yourself as indivisible, passing through different phases, you're O.K. The first few times I ever took marijuana, I gave myself up to the effects of the drug completely, took the experiences as they came. But now I

cannot take them without their triggering off a whole chain of memories of living nightmares. We're talking of ontological insecurity, of not being able to see yourself as an entity. You have two sets of friends and two frames of mind through which you see them. For example: I was walking along, stoned, with a group of stoned friends and bumped into an unstoned, straight, friend; thinking he wouldn't fit into the group, I walked ahead with him, but was totally unable to communicate anything because I was mangling myself inside, help how do I act to be friendly, normal, etc. Being stoned with unstoned friends, or unstoned with stoned, either way it's a split situation. I *know* that the unstoned will regard my behaviour as eccentric, nothing more, but the conflict is within myself: I am stoned, how do I behave in an unstoned manner?—I am two people, how do I swop minds so that the stoned mind becomes part of the unstoned body. It may sound ridiculous, but this is what happens.

The conflict is within the mind. It is when you feel that your mind is split in two, when you lose confidence in the processes of rationalization, that the troubles start. Marijuana slows down the critical faculties. When stoned, you may become aware of your complete inability to jump out of the maze of rationalization; you can only take the steps slowly, one by one, and turning back is difficult. If someone says something slightly double-edged about you, you take hold of one implication and follow it down into the dark without ever seeing the light of the other implication. And then you start to wonder if your processes of reasoning when unstoned aren't equally invalid. The split widens.

If not schizophrenia, then paranoia and hypochondria (the -ias which can land you in hospital). You walk into a pub stoned, aware that you're stoned, conscious of your every movement, terrified the people will call the phuzz—there is no rationality here. You can even talk about being stoned and be understood as drunk.

Part of the trouble is that marijuana is illegal. Medically it may be harmless (as some eminent physicians have gone on record as asserting); musically it may be beneficial; but socially it is evil. It is socially addictive, you take the drug in a group; you feel yourself to be becoming dependent on that group; you're branded as a criminal by society; is it surprising that you split the world in two? It is because the drug is illegal that the groups become cliques. And the papers, priests, judges, doctors keep hammering that L.S.D. can lead to insanity. Maybe it can; but I do not see a clear dividing line between medical insanity and ontological insecurity, the one caused by the drug, the other by you in your environment. You

do not become insane just like that, there are many factors leading up to the breaking-point; these factors are multiplied by the ravings of the social conscience. Mechanistic society vs. personal freedom. Do you wage your own personal war against society? At what point do you recognize insanity in yourself?

All this may seem a long way from the Flight to the Himalayas. But I am trying to bring home this insecurity, the inability to decide who you are and to what you belong. Perhaps there's crisis in personality; you don't like to feel dependent on either set of friends, on the drug or on the person who helps you to get off it, so to whom do you turn, having nothing within yourself on which to rely? Dependence on others vs. inner strength. This is another function of religion. Please God, help me to help myself. And faith only comes if you want it hard enough. Here again, faith in an objective God (Christian) is that much harder than faith in an internal God (Eastern).

Then you suddenly realize that you're still alive, still an entity, that however much you may have been thrown to and fro, there is something inside you which has remained intact. Posit the inner mind. Perhaps this will provide the frame round which you can mend your broken bones. You read East Coker and find hope and peace in the still waiting. There must be two kinds of introspection, the one by which you have been bound and another: mind upon actions of the body (including actions of the mind—am I thinking satisfactorily, etc.); and the same thing with the inner mind in view, directing and learning at the same time. The inner mind must be the thing whose growth and cultivation lead to enlightenment. You are still very much bound within yourself, but you realize there is hope and peace. You look East—possibly for another handle to grasp—because the West has buffeted you so.

L.S.D. = Legalize Spiritual Discovery. But what is spiritual experience? I think that one is all too easily led to label experiences spiritual when they are at all cosmic. And by cosmic I mean simply that the drugs seem to give Experience of the Universe. Through experience of the senses (wow dig the colours groove the sounds) you may be led to lose your awareness that you and the surroundings (or an object of attention) are distinct. You can get this when you're walking along the bare shoulders of a Scottish mountain, or gazing into the sea, or lying on a Norfolk beach, just as you may induce it by drugs. I took marijuana for the music. Whether the mind is dulled tricking itself into thinking perception to be improved (just as up a mountain you may be unaware of lack of oxygen, because you feel O.K. until you actually snap);

or whether aural perception is not so impaired as your critical faculties; or whether your sense of hearing really is improved; the point is that you and the music sometimes become one. Drugs offer a short cut to musical oneness. Through listening to music when stoned I have learnt a great deal. But is the experience spiritual? In terms of the above model, postulating the inner mind, it is not. The mind may be one with the external environment, but this is different from the inner mind being one with the internal environment—similar to the difference between concentration and meditation perhaps. I might be one with the music, aware, at the same time, of the emotions through which I and the music are passing; this awareness would take me from the musical sensory-plane on to a mindful-plane (and so on up?). I cannot explain since I know nothing of the spiritual; but I have to assume the existence of the inner mind, otherwise I am meaningless, confined to the tortuous wanderings in the maze of the (real) mind, and unable to jump out.

I think that the main danger with drugs, qua spiritual experience, lies in the fact that you don't have to put any effort into the drug-taking. You take your drug, lean back and wait for the effects. Instant enlightenment via a shot in the arm. If I thought that the spiritual was passively achievable rather than actively attainable, I should give up here and now. I should be without hope or peace. An image that springs to mind is of a horseshoe, representing one's subjective experiential words: at one end is the spiritual, attained with active effort; at the other, the experiences of drugs, achieved passively, without effort. They may seem to be very close together, but they are really poles apart. (Although the image breaks down, because I don't think the spiritual is experiential at all; it's beyond the subjective and the objective.)

The passiveness is insidious, it takes possession of you, body and soul. You may excuse it by saying that you're waiting for the spontaneous explosion of creativity—or even that you're waiting for, not Godot, but God. But it's insidious and it regenerates itself. You become like the three sillies: if I were to get up from my deck-chair, and if I were unable to walk, were to fall down, break my nose and bleed to death, wouldn't that be a pity? You become incensed with the problem of how to break the passiveness, thereby going deeper into the maze, further into the dark.

I think a solution might come through suspending rationalization, through waiting in a tree as a fruit—but just waiting, not waiting to be plucked and not even hoping that one fine day you'll suddenly take seed and flourish.

**I said to my soul, be still, and wait without hope
For hope would be hope for the wrong thing; wait without love
For love would be love of the wrong thing; there is yet faith
But the faith and the hope and the love are all in the waiting.
Wait without thought, for you are not ready for thought. . . .**

As far as this goes, I feel that I'm better off in my deck-chair, than trotting off East. I am not sufficiently aware of myself, only afraid of the difficulties which I might face in trying to lose my awareness. If I went East and found a guru, I should be terrified of a number of things: that, in the first place, I was going merely to escape from Western Society; that I was looking for another handle to grasp, to take the place of the drug and clique; that I should become dependent on the guru (whose function should be to help me to help myself); that I should always be comparing new experiences with the drug-experiences; and so on. If this illustrates anything, it is the maze of rationalization.

Rather than turn another corner in the maze, however, I shall jump right out, leaving you to draw your conclusions. My own conclusion is that the West as a whole needs to jump into the tree of waiting, and that, although we youth may be belaboured by the priests for our decline in religious belief, I do think that there is an upsurge in religious feeling, and certainly in religious questioning. The overriding social question is whether the sufferings of the Eastward-turning drug-addict are part of the birth pangs of a larger process, the regeneration of the West.

The Story of a Desert Village

Winifred A. Coate

The Abdelliye Village was started in 1961 as a refugee relief project. Its founder, after many years of teaching in a Christian school in Jerusalem, had been since 1948 organizing unofficial relief activities for the Palestinian Arabs who had taken refuge in *Zerka*, some 12 miles north east of Amman, Jordan. From the start she had been much concerned at the demoralizing effects of living on charity and the enforced idleness of the refugee camps. She had seen the almost magical change in personality which resulted when a listless refugee was offered a chance of work and by means of small loans had started a number of work projects in *Zerka Town*.

But 70 per cent of the refugees were "fellaheen" (peasants), many of whose families had owned their own land in Palestine for generations. Without land it was impossible to help these people, who, in general, were less adaptable than the craftsmen of the towns. All the available land was owned. Only the desert remained—and these people were not desert-dwellers.

Opportunity came when the Arab manager of the *Zerka Industries*, himself a refugee from Jerusalem and a well trained mechanic, discovered that he possessed powers of water divining. After proving his capacity in several places, he determined to try to find underground water in the district north east of *Zerka*. No complete survey had been made, but all the official geologists in Amman assured him that it was hopeless land. Not far away were remains of mediaeval castles, which suggested that this now waterless area had once supported fairly large populations. Now it was barren. The rainfall is negligible, rarely more than 4 inches per annum.¹

The desire to found a village grew with the years, but the

¹ [Ed.] Margaret Bremridge, who was an assistant mistress teaching science and geography at the Girls' College where Winifred Coate was head-mistress, has supplied the following geographical note, amplifying this paragraph (she has also supplied the map):

"Palestine has sometimes been called a beach of Arabia—a stony and rocky beach but nevertheless one which can be richly cultivated owing to the seasonal winter rains. It forms a 35 miles wide border to its hinterland which stretches 1,500 miles to the Indian Ocean. In the dry six months only the trees and irrigated orange groves show any sign of green and geological experts enjoy themselves surveying all the strata of rock laid bare in their variety of colours. A transformation scene takes place in November when the early rains come and the land of milk and honey dons her green mantle and her glorious floral robe until the scorching winds from the desert in April leave her again brown and bare after reaping the harvest. This trans-

prospect was daunting. The small donations from friends which had been enough to establish in business a tinsmith or a street seller would not suffice to exploit the underground resources of the desert and provide the necessary pumps, pipes and engines for the wells. Some friends became interested, but most of them thought it was a mad project and the fund had reached only £200 (with a promise of an interest-free loan of £1,000), when in 1961 suitable land became available and it was decided to risk a start. The whole

formation takes place throughout the whole of West Jordan down to the Mediterranean shore but in East Jordan formerly known as Transjordan only the valleys of the Jordan tributaries and their immediate hillsides are so affected by the rains from the west. The little rain that falls on the great plateau is soon lost in the limestone rock and in this 'country', politically defined as separate from Palestine in 1920, with an area of 20,000 square miles, only a fractional percentage is cultivatable, for the plateau's ridge forming the watershed east of the river Jordan is at its nearest 10 miles and at its furthest 50 miles from the great rift valley, also waterless, being in the rain shadow of the (Biblical) 'Judean' hills.

The water courses of Jordan have been surveyed and various plans devised for harnessing the flow from tributaries into the main river but all these projects would cost far more than the Jordan Government is capable of providing. At Zerka, nature supplies sufficient water from the small river for the survival of the original village and the large community camped around it but the surrounding plateau (over 2,000 ft.) is dry, barren and windswept. The main railway follows the direction of the adjoining desert road running due north from Aqaba to Damascus passing through Ma'an, Amman, Zerka and Mafrak. It lies on the crown of the watershed thus separating the semi-desert from the true desert. Along this ancient road there are remains of Crusader castles from the eleventh century indicating the presence of water in those times. In the desert too there are remains of earlier Arab castles dating from the original Arab tribal settlements (circa seventh century A.D.). Some are derelict ruins. Others are surrounded with greenery for they are still oases.

Michael Ionidies has made extensive researches into the water courses of East Jordan and geologists and engineers know that there are great reserves of underground water so far untapped, but where does one begin to look for water on such barren waste land, condemned by the government as unfit for cultivation? It happened that the industrial manager of Zerka Industries discovered that he had the gift of water divining. Miss Coate after careful study of geological and archaeological data decided to try him out on an area of desert road 18 kilometres from Zerka in the direction of Baghdad. She was able to buy at £1 an acre these desert stretches much to everyone's amusement. Day after day, week after week, month after month for over a year this patient man walked systematically over the desert with his twigs in his hand. After 13 months their faith was rewarded but so certain was Miss Coate of final success that during that time she organized working parties who came out daily the twelve miles from Zerka to plant eucalyptus trees to act as a wind break and to prepare the soil for cultivation. At first four labourers accompanied the water diviner and a tractor to the spot. They had to carry their own drinking water and also sufficient to keep alive the young trees. Hearing of this a few friends provided enough money for a second hand car and this enabled the pioneers to plant more trees and keep them watered".

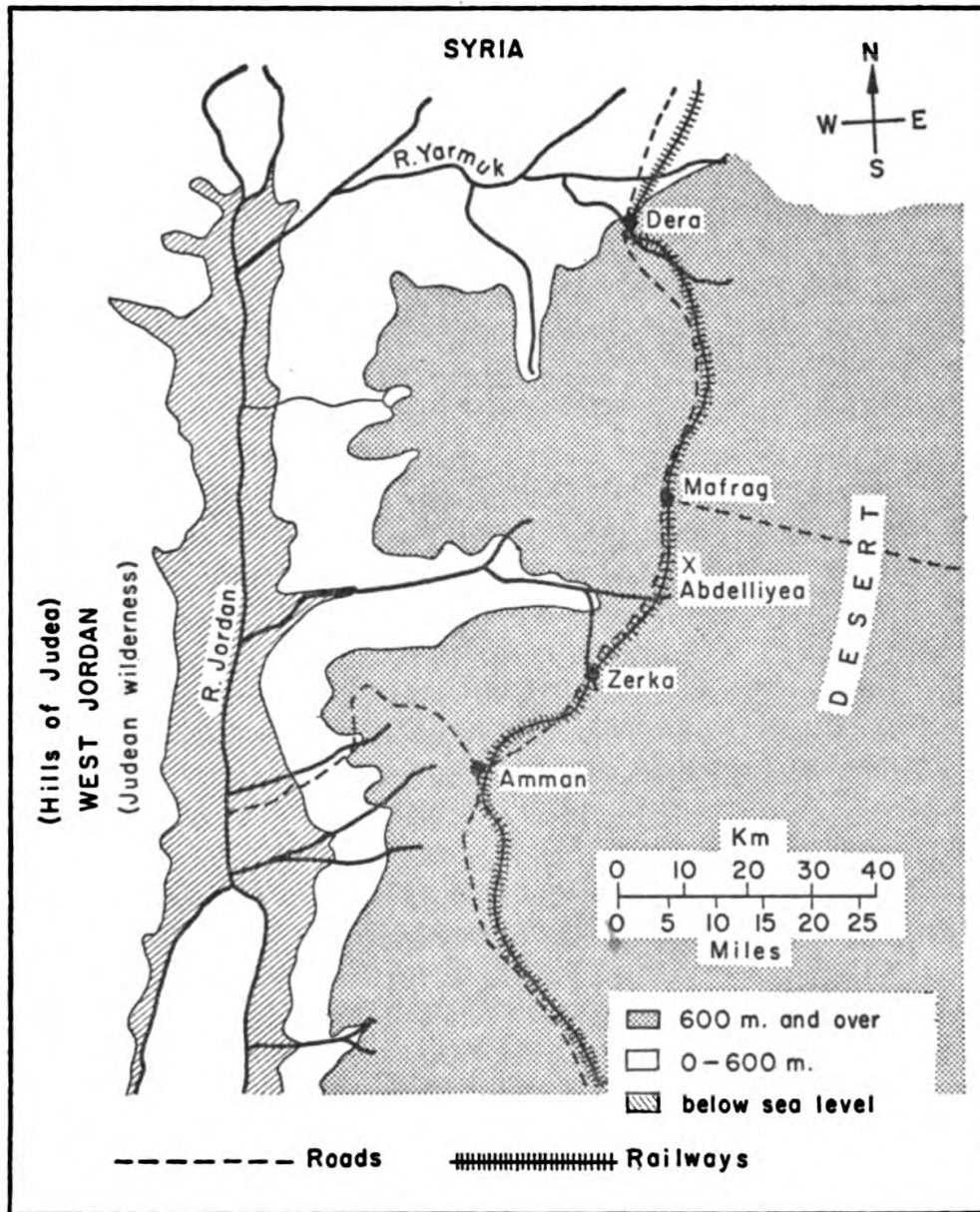
meagre capital was invested in the purchase of land bought very cheaply, because at that date nobody believed in the possibility of finding water. "Enough to drink, perhaps", said the then head of the Water Authority in Amman: "certainly not enough to irrigate".

The gift of a tractor inspired an immediate start and for the first six months a few labourers worked desperately with pickaxes; clearing stones from the ground and marking out roads for the new village. Water was carried daily from Zerka, 13 miles away. Then, with a timely gift from the British Council of Churches, a cottage was erected to shelter the labourers from the burning sun and piercing winds and to enable a few to sleep there to look after the tractor. This little house is still known as "Miss Coate's Folly" because it was built before any water had been found. But it was a sheer necessity. Not a green thing was in sight and no living creature, except jerboas (desert rats) which the passing Bedouin would catch and roast.

Still no water; but eventually Oxfam came to the rescue with a gift of £5,000 for the first well and the Save the Children Fund promised to build the first family houses, if water were found. After many frustrating delays, digging started in July 1961. Expectation, hope and anxiety alternated as the days passed, but on the last day of the month water appeared. A test was made and pure water flowed over the surrounding country. Bedouin with their flocks came from miles around to enjoy the miracle. Excitement was intense and the foundations of the first family houses were laid that same week.

By May 1962 the first well had been fitted with a 6-inch submersible electrical pump and a generator had been installed. Irrigation could begin. His Majesty King Hussein came to open the Project and gave the name "Abdelliyeh" to the new village, which then consisted of only five houses. The crops of the first year were very successful, which was a great encouragement to the first five settlers, all of whom had endured the grilling conditions of the development work of the previous year. The Government gave 500 dunums of land free, the rest had been bought from private owners; so that the village now owns about 2,000 dunums (500 acres).

Much remains to be done and still about a quarter of this land has not been developed, but considerable progress has been made. Help towards the necessary capital outlay has been received from various organizations, including the Freedom from Hunger Campaign and from Societies in Germany and Sweden, received through the World Council of Churches. Four successful wells have been dug and are in operation.



Usually the water appears at about 70 metres from the surface; the well is dug to about 100 metres and the pump is set in the well at about 85 metres depth. The fourth well, the strongest, yields about 650 gallons per minute. The soil lacks nitrogen, as there had been no organic matter in it, but can be rapidly improved by dressings of animal manure and other fertilizers. Crops like peas and beans have been grown to increase the productivity of the soil.

There are now 92 men working at Abdelliyea: 44 farmers, each responsible for an irrigated plot of 20 dunums (5 acres) of land

for the cultivation of vegetables; 21 regular employees (mechanics, tractor and truck drivers, dairymen, watchmen, supervisors, etc.) and 27 casual labourers.

Housing is the most urgent need. Many of the farmers live with their families in tents during the summer, but return to the towns in winter, so houses are needed in order that winter as well as summer crops can be produced. At present there are 29 families with houses; six more houses are being built; 12 more are needed. Two of the mechanics, two dairymen and one driver must be housed at Abdelliyeh. The remaining houses are for farmers. An Office is also urgently needed. A family house costs £500.

Abdelliyeh is not now solely a refugee project and so it has no political bias. Of the first eight settlers, who have been given their title deeds, five *are* refugees (from 1948) and three are Jordanian born. By Jordanian law all are Jordanian citizens, for Jordan, alone of the Arab States, has since 1948 given the immigrant Palestinians full rights of citizenship, including the right to work. The majority of the remaining 36 farmers, still on probation, are also refugees. Many of the casual labourers now being employed are "new" refugees, having arrived since the recent war.

No attempt is being made to resettle a homogeneous population. The first intention of transplanting, as it were, a Palestinian village, was quickly abandoned; partly to avoid political complications, but chiefly because it was felt best that the settlers should not live too much in the past, but start putting down new roots. The nostalgia of the Arab refugee is very real and not lightly to be disregarded by those who seek a solution to the problem. The constantly expressed desire to go home to Palestine is not just a political slogan; it is real and permanent, as is the natural craving for one's own plot of land. One old fellah said to the writer that in his dreams he often found himself digging around his own olive trees in his own family olive grove near Lydd. Another man, a teacher, for many years used to carry in his pocket the key to his house in Jerusalem and loved to display the architect's plans of the modern house he had built with his own savings but had now lost.

At the same time facts must be faced. Whatever his political views, everyone wants to work. "I want to live" is the plea heard almost daily from people in search of a job. The possibility of owning a piece of land anywhere has a tremendous appeal.

Anyone who will work is welcome in Abdelliyeh. There is great competition for the houses. The men usually start as casual labourers, clearing stones, digging, making roads, cementing irrigation channels. When a plot is ready for cultivation, one from

the gang of labourers is chosen to take charge on a share-cropping system. He is given free water and ploughing and takes half the income from the sales of his vegetables. At first he is given a monthly money grant, but this is recoverable from the income later in the season.

When he becomes successful and when funds allow of the building of a house, he is settled with his family and treated as though he were the owner. At that stage he pays for his water and all other expenses of his plot and takes the whole income. He begins to repay £50 a year towards the cost of his house. After about five years he is given the title deeds and takes possession, completing the payments for his house later.

The work is exacting but healthy and satisfying. The only qualifications demanded are industry and good nature; these are tested while he works as a labourer. The ignorant, if willing, can always learn and most Arabs have a real feeling for the land, but he must be able to get along with others and be neighbourly. So Palestinians and Jordanians, Moslem and Christian, are in fact working happily alongside one another and there are also Bedouin among them. The Bedouin tribes near Abdelliyeh, suspicious at first, grew friendly when they found there was a chance of employment for some of their young men. Many of them are begging for houses, so that they may settle and educate their children.

In the six years of its existence, Abdelliyeh has caused fewer "headaches" than were anticipated. Personal difficulties and quarrels are rare. Most of the farmers, though shrewd and hard-headed, are understanding and helpful. When one man was ill for a month, his neighbours took turns to weed and irrigate his land and nobody asked for payment. They also learn from one another's experience and soon begin to make a good living, so that the family is satisfied. The women have settled better than was expected. Accustomed to having to carry water for all domestic uses, they are happy to have water laid on and living standards are being raised. One woman who had lived with a family of ten in one room with no kitchen said what a difference it made to have two rooms as well as a kitchen, so that she could keep one room always tidy for guests and coffee drinking. When the wife is energetic she works with her husband on the land, for the peasant women among the Moslems are not veiled. In the busy days of summer, all the family, even the smallest children are out together picking tomatoes or sweet peppers; a very colourful sight.

The only real trouble has been a chronic lack of ready money. Most gifts come earmarked for special purposes and maintenance is

difficult. A broken shaft in a well or some minor disaster with a truck or tractor may cause much anxiety. On the whole, however, the rigid economy which has been necessary from the start, though often tiresome and worrying, has probably been good for the Project. It has been necessary to proceed slowly and good foundations have been laid.

Financially the Project will eventually be self-supporting. It has already proved its viability. At present all profits have to go to repaying a loan of £10,000 taken from the Jordan Development Bank and on developing the remaining land. As soon as possible it is hoped to build up a reserve for contingencies.

Started under the auspices of the Zerka Industries, which is now incorporated as a Jordanian Company under the name "Zerka Industrial & Agricultural Company", the project continues at present under the control of the company. In spite of many sessions with their lawyer, the directors have not yet decided on the future of the village. The Arab is individualistic and does not take kindly to the idea of Cooperatives. If in the future a Cooperative is formed to control the wells, pumps, heavy machinery and vehicles, the farmers will still have individual ownership of land. When the number of registered owners is sufficient to constitute a real village, the whole property not then allotted to individuals may be registered as a "waqf" for the benefit of the village as a whole. Waqf land cannot be alienated from its original purpose.

It had been intended to form a village of 150 peasant farmers, who, with the necessary extra workers, mechanics, drivers, administrators, teachers, shopkeepers, etc. and their families, would it was felt, make a suitable size for the community. But more land is needed and the project cannot afford to buy at present prices. Since water was discovered and general development started, the value of land throughout the area has risen greatly. Meanwhile few people seem to be thinking about the future and the project goes on growing, as more of the available land is brought under cultivation, a few more dunums each year.

Fortunately everybody needs vegetables and so Abdelliyeh has carried on fairly normally, in spite of rising costs and other results of the recent war. The general situation in Jordan is serious: there is much unemployment and much overcrowding in the towns as well as in the refugee camps. The whole nation seems to be still suffering from shock, with a resulting condition of fatalistic inertia. It is a pleasure to get out to Abdelliyeh, where everyone is thankful to be employed, even though almost everyone's home is overcrowded with refugee relatives from the West Bank or from Gaza.

Camels seem to be more a cause of complaint than people or politics. In the late summer Bedouin arrive from far distances with large herds of camels. There are Government wells not far away, but there a fee is charged so it is preferable to come to Abdelliyeh for free water. A herd of a thousand camels (and there are often as many or more at one time) can soon drink the channels dry and irrigation is at a standstill while they remain, for the camels drink as fast as the pump can supply the water. Fortunately the wells appear to be inexhaustible.

Recently an old camel leader, when told he really must go to the Government well, said : "Allah has given you the water, surely you must give it to me". The argument that Allah had not provided the solar and oil for the engine or the wage for the mechanic did not at all appeal. The exasperated farmers had to wait, perhaps not as exasperated as might have been expected, for doubtless they reflected that, as they believe, everything is "min Allah", from God. Perhaps they wondered when Allah would send the funds for a fence to protect their vulnerable frontiers.

Garble

Michael M. Hare

“Between the idea and the reality. . . .
Between the conception and the creation. . . .
Falls the Shadow”.

—“The Hollow Men”, T. S. Eliot.

On the face of it any attempt to build a bridge from the sciences to religion or conversely, and more specifically, from religious insight to scientific explanation, requires that one concede, as a working hypothesis, the validity of some form of theism. Today for many such a concession seems quite impossible. My own initial view was that of the agnostic. Yet as I explored incidents of seeming transition from apparent religious experience to the subsequent development of physical law the hypothesis gained plausibility. The alternative hypotheses seemed inadequate. To be sure one might choose the Freudian one that supposed religious experiences, visionary experiences, are symbols of hidden sexual urges. The therapeutic value of the hypothesis evidences some element of truth in this. Yet it is too simplistic. On the one hand it neglects the possibility that sexual urge is only one facet of some sort of universal binding force. On the other one wonders why such a wealth of symbolism is required to exorcise a simple physical urge even though it be connected with the preservation of the species. Alternately one might choose to construct, with C. G. Jung, something one calls the deep unconscious, peopled with his archetypes. This is more appealing because the construct, as it is evidenced in succeeding civilizations, can be shown to be structured, and structured in such a way that indeed sex is only a facet of something more profound. But again one is hard put to explain, via genetics, how one can inherit visionary experiences of beings long dead from an alien race, and artifacts from an alien culture, as is not infrequently done. Yet there is a way out of this problem. Jung wrote of the deep unconscious as a part of the human psyche. Suppose instead we substitute the word universe for human psyche. In doing so we in no way impair his really very workable system for the integration of the personality. However, this does have the implication, frightening perhaps to many, that we live in a universe still peopled by beings long dead with whom we interact and who jointly occupy with us realms of physical reality we are unable to observe via our ordinary senses.

This in turn implies what I shall simply call a complex universe. Once we have turned Jung's construct inside out in this manner we are no longer bound to his idea that we spin these experiences out of our own bodies, as it were. It permits and invites the theistic hypothesis we need. Such a complex structure invites the idea that it is permeated by some kind of overall control which we do not yet, and may never completely, understand, involving an inter-communication between the parts. In this article I will therefore call whatever this is a Message Source, using caps to indicate that the hypothesis is theistic. Religious or mystical experience is then seen as contact with this Source and its ramifications or subordinate facets.

Given this assumption, the principal stumbling block to an adequate understanding is the lack of direct, immediate, correspondence between mystical insight and scientific law. It seems clear that numbers of people over the centuries have had strong convictions that this correspondence exists, but, to adapt Eliot's words, "Between the idea and the reality" there appears to "fall a Shadow", a confusion which obscures the correspondence. I will call this *garble* and attempt to explore its nature in a preliminary manner.

Using Margaret Masterman's terms,¹ what is the nature of the confusion in the transition from mystical vision to "icon" and then to "iconic vehicle", which states the law? Primary garble may be pictured as the presence in a mystical message of multiple meaning and thus ambiguity of the initial symbols. Secondary garble may also arise from what I will call lack of integration of the receiving personality or also from inadequate knowledge of the scientific disciplines involved. Garble is also entailed because the raw experience is not intellectual in character as is scientific explanation, a problem which I will discuss shortly. Perhaps I should add here that I will make no distinction between raw intuition which has erupted into consciousness and revelation. This is to say there are no wrong intuitions, but frequently there are intuitions which have become garbled.

What is meant above by "multiple meaning of symbols"? Suppose a symbol in the message consisted of the sound "gayle". The multiple meaning and ambiguity lies in the fact that one might interpret this as "There is something Irish or Gaelic" or "There is

¹ See her "Theism as a Scientific Hypothesis", *Theoria to Theory*, Vol. 1 Oct. 1966 through July 1967. The icon is there seen as a reflection of the nature of God on the one hand and on the other as a prelude to scientific formulations.

a great wind blowing" (gale) or one might assume it was the proper name Gayle which was meant. But even worse all three meanings may be entailed. This example gives a bird's eye view of the problem which exists in the absence of any intellectual "cement".

Before enumerating the factors possibly involved in garble it will be necessary to have some sort of mental model of what may be happening as a heuristic device. If mystical experience is capable of scientific explication we can hope eventually to identify the forces and factors involved in transmission and subsequently the organic parameters brought into play. Suppose, as one tempting possibility among others less so, that mystical experience, erupting into consciousness, arises from sort of time varying signal which is translated by our nervous system into the symbolism of the senses so we perhaps see it, as we would with a light signal, or feel, smell, hear or even taste it. The experience may be susceptible of expression in terms of a pattern of forced oscillations in the nervous system. If so this leads to the suspicion that the relation between Message Source and man (or beast for that matter) may involve resonance. The message may be strengthened either by unconscious adjustments of frequencies within the human nervous system, or possibly by adjustments at the Source. We may also think of this process as invasion of the human personality by another. As such it may well be akin to both telepathy and hypnosis.³

Given this general hypothetical picture, it will be well, prior to the discussion of specific examples, to list possible, but not necessarily probable, factors which not only contribute to garble but may actually inhibit the experience. Let us take up the least interesting first. We cannot rule out the possibility that an element of garble is introduced by the interference of natural phenomena, for example meteorological phenomena. Secondly, there can be interference by symbols of our own making; which are reactions to the events of our daily life. Reaction dreams of this sort are not uncommon. Thirdly, there is a very real possibility of visionary experience being

³ In choosing the word resonance above I did not have in mind Ninian Marshall's theory of "resonance" for telepathy (see *Brit. Journal for the Philosophy of Science*, Vol. 10, Feb. 1960, pages 265-286) but rather a closer analogy to the general theory of vibrating structures. Yet resonance implies for me as for Marshall his "tendency to become similar". However, as Marshall too realizes, this latter thought means more than simply similarity of frequency. His introduction, for good reasons, of the factor of complexity is also very appealing. In other words, if attempting to write an expression for the internal energy of the vibrating structure, my inclination would be to introduce factors, such as Marshall suggests, as variables, (hitherto concealed participants in the constant), into the equations of simple harmonic motion.

an admixture of a vision of some valid outer reality and dream symbols which relate only to the maintenance of one's own body as a healthy organism. Here we are perhaps close to the element of truth in Freud's hypothesis. It seems as if the organs of the body have a "language" of intercommunication, a dream language. Perhaps some day we may discover enough about the neural mechanism so that this element could be isolated by putting into correspondence dream frequency patterns and the frequencies of neural patterns; thus eliminating an aspect of garble. Next I will suggest an element of garble which is twofold in character. This element arises from both multiplicity and scarcity of signals. As far as scarcity is concerned it seems evident that there is some process in the mind which normally protects it from being overwhelmed by incoming signals of all sorts which impinge upon us from our daily world. There is a selection process and if this is out of order it can limit the mystical experience and only a fragmentary message gets through.⁸ On the other hand it is evident that there can be invasion of the personality by other human personalities, hypnosis whether consciously practised or not. But, more importantly, under this hypothesis of a theistic, complex kind of universe the possibility exists that the Message Source is itself multiple in character. If God sat up there some place with a long white beard most of this problem would not plague us. If, however, the Message Source is associated with the totality of things, then we must consider that in the raw experience one may be perceiving symbols in the mind of God as a whole, or perceiving symbols of more limited significance, arising in the mind of beings which, whether we consider them to be surrogates of God or of lesser stature, nevertheless are not the total Message Source. Thus the possibility exists of what we might call subsidiary mystical experience.

Lastly, and perhaps most importantly, garble is undoubtedly introduced by the inevitable limitations of the receiving personality. One such limitation is that we are all of us conditioned by our culture and thus almost automatically rule out interpretations of

⁸ Also see address by Louisa E. Rhine, Proceedings of the Parapsychological Ass. No. 2, 1965, Durham N. C., U.S.A., in particular pages 67-78. It is stated there that spontaneous waking cases of telepathy show that 45 per cent did not yield a complete item of information. If mystical experience is a form of telepathy this could be a source of garble. The blockage in nearly all such cases is known to be due to strong personal emotional situations. It seems possible that experimental work in telepathy might pin down the blockage in terms of faulty adjustments of parameters of the nervous system such as brain rhythm and pulse rate. The maladjustments, whether in telepathy or mystical experience, may result in "resonance" only being maintained long enough to yield an incomplete message.

the raw experience which cannot be easily associated with the cultural pattern with which we are familiar. A variation of this difficulty, this source of garble, is inadequate training in some particular discipline or disciplines, necessary for the interpretation of the Message. The next limitation I will call inadequate integration of the receiving personality. In this connection I think that Plato's (and subsequently Jung's) hypothesis as to the four functions of the personality is a very useful one. The terms I shall use will be intuition, intellection, feeling judgement, and sensation. In the interest of brevity I will confine the discussion to intuition and intellection.⁴ If we now associate the word and faculty of intuition, or at least conscious intuition, with mystical experience, I think it would be generally agreed that this involves a conscious or unconscious act of submission. The act of submission may be forced upon one by outer or inner events. It seems that such inner events can even include impaired physical health which reinforces the idea above that the mechanics of mystical experience involve changes in some parameters of the organic receiving systems. In one way or another submission appears necessary to secure what I have called resonance. The mind is then flooded, perhaps, with symbols but, as above, these symbols do not in themselves have intellectual content. The faculty of intellection must then be applied before vision can become icon and then iconic vehicle, going perhaps through several metamorphoses, before raw experience can eventually be translated into scientific explanation. But intellection requires an act of will and as such is incompatible with intuition through submission. Thus a struggle ensues. In the best integrated personality the capacity exists to alternate between intuitive perception through submission and willful effort at intellection. This "grinding of the gears" will result in some residual garble, which has to be "filtered out of the gear oil". Furthermore no human mind can possibly hope to interpret the totality of the Message Source to which it may have access. Thus although we may translate mystical experience into scientific explanation, the explanation will be only partial.

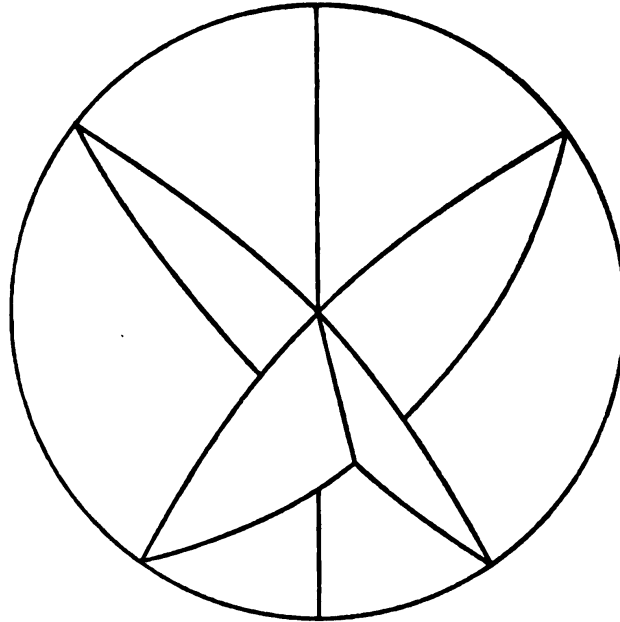
We will now take a look first at three examples of visionary experiences. These are chosen for their rather markedly different character.⁵

In considering them it must be kept in mind that there is no

⁴ An excellent interpretation of the full structure of the personality along these lines is given by P. W. Martin's *Experiment in Depth*.

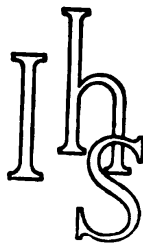
⁵ The symbols and quotations are selected from a voluminous diary kept by the author.

hard and fast line between raw experience and the amplification of it by the human mind. First example : After a succession of periods of contemplation and struggle to bring the pattern into clear focus, a person constructs the figure below :



I will call this a pre-icon to distinguish it from a true icon having direct correspondence with an iconic vehicle, i.e. the explication of the icon.

The second example chosen followed the first by some six months: The person constructs a vision of a stone ribbon of hieroglyphs floating in the sky at the end of which is a four-faced pillar. The third example followed the second by about two months: The inner eye sees, as in a dream vaguely, the symbol.



An attempt at rationalization then appears to turn this into the meaningless algebraic expression $2\pi hr/10$, incredible as this may seem to the practising Christian, who would recognize it despite the signal coming in slightly distorted. Interspersed among these figures in the records is also a wealth of sexual symbolism : I will disregard

this here because a large part of it appears to relate to the integration of the personality as discussed above. It should be kept in mind, however, that at the time of the experiences the person is without the means to disentangle symbolism associated with integration from the other experience. Thus the symbolism of integration tends to garble the experiences in which we are interested.

Let's now ask: Is the stone ribbon in the sky to be taken as a message? If so what relation does it bear to the first example? With our hypothesis of a complex universe, however, it is possible that this vision is of some reality of which we have no perception via our usual senses. In this connection it should be pointed out that a psychotic patient of Dr. Jung claimed to see a phenomenon taking place on the surface of the sun.⁶ With astronomical knowledge available subsequent to Jung's writings, it appears quite possible that the patient saw, via our Source, a real phenomenon on the sun which could never have been seen by the naked eye. Thus the Source on occasion may be a source of direct knowledge, rather than a source of message. If the knowledge is accepted by the receiving personality as valid then of course it must eventually be worked into the scientific explanation to be drawn from the message.

Let us now turn to the symbol of the letters. Interpretation in the form of the algebraic expression arose because h is the algebraic symbol for Planck's constant of action in physics, and a try at scientific explanation was already being attempted in a rudimentary way. When this yielded apparent nonsense it was then realized that the symbol could be written out IHS, and it was vaguely recalled that it meant "in this sign". Recourse to the dictionary was quite enlightening. I will not discuss the dual etymology of the symbol as on the one hand the name of Jesus and on the other where it is taken to represent the words associated with the Labarum in the time of Constantine. Suffice it to say that when it is translated as "In this sign thou shalt conquer" and then taken as meaningful in both senses it is what I will call a very powerful Source of motivation. As such it is distinct in character from a message with scientific implications. It conveys a sense of intimacy with the Source. It will be clear now that I have deliberately taken these three excerpts from mystical experience so as to demonstrate its three different facets. If no distinction is made between them then we have a source of garble of a rather elementary variety.

Turn to the diagram, the pre-icon. It was thought to represent a sphere enclosing a line (top to bottom), a plane (lower right to

⁶ See Erich Neumann's *The Great Mother*, p. 14.

upper left), and a prism (lower left to upper right). The gradual constellation of the pre-icon was felt as a compulsion to symbolize not just something, but EVERYTHING, and included the idea "everything forever is". Furthermore it was felt that explication would involve "expansion of the plane to a circle" and of "the prism to a sphere". It would thus burst the bounds of geometric representation and require elaboration in some other form. Space will not permit following out these elaborations in detail, but three principal roads of elaboration open up. Since the figure is experienced as numinous, one naturally elaborates it as representing the structure of God. Steps were taken along this line and probably a theologian would have stuck with this theme. Secondly one versed in the arts might elaborate it in a set of drawings. This was actually done and culminated in the design for a temple, which in turn may be thought of as symbolizing the body of God. But thirdly one may also attempt to elaborate it into a cosmology with accompanying scientific explanation, which, after all, may also be thought of as the body of God. "All roads lead to Rome". All three elaborations might well be valid interpretations of the message, just as the sound *gayle* has three connotations. However confusion of the three roads produces unintelligible gibberish, garble. Consider next that in order to make an elaboration of mystical experience meaningful to others, one must choose a road which is meaningful in the context in which we live and today this is the context of scientific explanation.

The numinosity of the figure leads to its being considered almost as a precious stone containing a mystery. Therefore it is played with by the mind, turned this way and that, seeking through vague analogies to penetrate the mystery. It should be kept in mind that analogies lie at the very heart of scientific explanation. The record shows that the figure was felt to contain "time as the dimension we cannot see". The intersection of line, plane and prism was felt to represent in some way different modes of being. The notation was made "Each of the elements at right angles to each other and each also a globe and the time globe is at right angles to the point Now. The Now, the point of intersection. This moment and every moment, all the intersections at this moment". On the face of it this is a "nonsense statement". But is it? In other words is it possible that there is an element of truth which has become garbled in the human intellect's attempt to move from intuitive symbol to some formulation of the nature of physical reality (scientific explanation)? This was followed by even worse nonsense statements as the figure was played with: "potential energy into kinetic via chromo-

somes”, “measure the frequency by drowning, then you see” and “the first and the last are both Now”. Note next that if the circle is thought of as the spherical universe it could in a very vague way indeed, be said to contain six dimensions. The line represents one, the plane two and the prism three. In brief what happened in this case was that over a period of years all these “nonsense statements” and “ideas” arising originally from contemplation of the preicon were de-garbled, expanded, refined and translated into a six-dimensional cosmology including three of time and incorporating different modes of being, of reality, and expressed through a proposed unification of the force laws of physics and biology. Whether that cosmology will stand up to empirical verification remains to be seen. However, the point I am making is that the faculty of intellection applied to mystical experience can, despite the ensuing garble, produce a self-consistent body of thought with apparent application to the world we live in. As an important postscript to that I would say that garble is much more evident if the receiving personality does not have a good grasp of the scientific disciplines with which he has to deal in elaborating the experience. In fact this secondary garble may never be removed, but this does not mean it could not have been with adequate discipline.

Consider that one reason we do not associate mystical experience with the development of scientific explanation is that persons working in disciplines they know well resolve the raw experience and the garble before it gets into consciousness. Thus we reach the fallacious but rather fashionable conclusion that if we make the necessary measurements, observations, we will derive physical law wholly by induction from these. The key process in developing hypotheses has been blotted out from consciousness. Let us now look at some historical examples. Close to this end of the spectrum is the experience of the French mathematician Jules Henri Poincaré. He tells us that one evening “ideas rose in crowds I felt them collide until pairs interlocked, so to speak, making a stable combination”. By the next morning he had only to write out the results in the form of his Fuchsian functions. Only the suspicion of an icon is present in the words “until pairs interlocked”. It is because of cases like this that I have used as primary illustrations the experiences of someone initially almost unlettered both in the scientific disciplines and theology. Furthermore history rarely yields a complete picture of the experience. However, historical examples are useful in categorizing mystical experience, that is separating out those aspects susceptible of development into scientific explanation and those that are not. For example the mystical experience of Theresa of Avila

although it included a literary icon of Heaven appears to be predominantly a Source of motivation. It conveyed a sense of intimate communing with the Source and drove her to good works, not scientific explanation. Likewise we have the experience of Pascal⁷ who saw a blazing cross. His scientific work did not spring from this because it preceded the experience.

There is another facet of the problem exemplified by the experience of the fourteenth-century anchoress, Julian of Norwich.⁸ She was shown "a litle thing, the quantitie of a HAZEL-NUTT", and "it was as round as a BALL". Here we appear to have something approaching an icon, a message source, but when she comes to sum up the meaning she does it entirely in terms of love: "Thus was I learned that LOVE is our Lord's meaning". But keep in mind that love is a force and as such capable, perhaps, of scientific explanation, but her personality balance was such that she did not translate it in scientific terms.

Turn finally to the experience of Kekulé, the German chemist.⁹ He was attempting to devise a structure for benzene, one of the aromatic compounds: Dozing, he saw snakes one of which suddenly seized hold of its own tail. He awoke and immediately turned this age-old symbol of the stuff of universe, the uraboros,¹⁰ into his conception of the benzene ring composed of a chain of six carbon atoms. I think it is particularly to be noted that in the case of both Poincaré and Kekulé they asked themselves informed questions in a particular discipline before the experience, and this minimizes garble.

Let us now return to the central question. Is it possible to validate mystical experience? The hope for an answer to this is the basic reason for discussing garble.

The examination of the personal records of those who did in fact produce empirically verified physical law is not going to be very rewarding in this respect. The records are too spotty, and too much has been swept under the rug, since it has not been fashionable for some time for scientists to admit to mystical experience.

Thus I fear we must depend on developing a new climate for scientific research, a climate in which the contemplative life is not disreputable. One of the difficulties here is that the human personality tends to either introversion or extroversion. To the introvert contemplation comes quite easily and when it goes deep it produces an inner opus, but the language of this opus is not the language of

⁷ *Experiment in Depth*, P. W. Martin, p. 173.

⁸ *Ibid.*, p. 180.

⁹ *A Direct Entry to Organic Chemistry*, John Read, Harper, pp. 37, 44, 48.

¹⁰ See Erich Neumann, *The Great Mother*, p. 18.

science. On the other hand the extrovert may translate intuitive experience into physical law without ever being aware of the raw experience because it never reaches a conscious level. Yet it is not impossible, given the proper climate to oscillate from inner opus to outer scientific opus and back again. If, over a period of time, we could discover scholars in the scientific disciplines who would be willing to cultivate this road and keep full records, possibly these records could be analyzed in the light of what has been said above and we would be able to work backwards from empirically verified scientific theory to complete icons.

What would be the consequences if, as discussed earlier, the elaboration of even a pre-icon can take three parallel roads, scientific, artistic and religious? It would mean that, in an epoch when many of our old values appear to have gone by the board, we could hope to work forward from the empirically verified icons to revitalize our culture in terms of both the arts and a moral code.

Comment

Some half-baked Reflections on the Need of Audile as well as Visual Images

There is a great deal to be said for keeping from enlarging the terms of editorial policy, and for stopping too many from joining in what has up to now been a civilized conversation. All the same, after reading the four issues, and especially Margaret Masterman's *Theism as a Scientific Hypothesis*, I want to ask whether the audile bias of Classical Protestantism is not entitled to an equal hearing with the visual bias of Classical Catholicism. The apparent exception in the oratory of the Counter-Reformation is to be discounted as a successful reaction to Luther. While iconoclasm has been finally rejected by the Church, how far have the spiritual discipline of the Western Church and ascetical practice taken into account the "Via Positiva"? How far have "action" and "creating" been dirty words compared with "suffering", "seeing" and "submitting"? How far is it good exegesis to attach icon in Genesis 1 v. 26 (LXX) to a purely visual likeness? Later "icon" will be used in these reflections as an audible term, but it would be a pity to stand on a verbal distinction. For those feeling that icon is now firmly identified with the pictorial through its Orthodox setting, it might be better to say: "Icon is a parallel to that embodiment of the pure word of God which comes out in Welsh Christian tradition through Matthew Henry's *Exposition of the Old and New Testaments* (which began publication in 1708) and took shape in the life and manners of the little Palestine of North Welsh villages, e.g., Bethesda". The treatment by Charles Williams of the *Via Positiva* in such a study of Dante as the *The Figure of Beatrice* (Faber & Faber 1943), is an instance of an unembodied auditory icon. Masterman herself speaks (Note 7, p. 351, *Theoria to Theory*, Vol. 1, 4th Quarter) of receiving the command as an auditory icon.

A more objective view of Revelation than that held by Pietist or Radical Theologians might be reached if some fragmentary hints in late Berkeley about our knowing, that can be summarized as "esse est symbolari", were to be developed in conjunction with a view of the Word, as symbol endowed with inherent authority; recording the Word Incarnate, and authenticated by Him. We must look in the West to action as a form of icon; as the Orthodox icon-maker is horrified by payment for the revealing of God in his icon, so the Western Christian is horrified by payment for his icon, voluntary loving action for his brother.

Our problem is that for many symbolism has ceased to be affective or effective, (cf. the phrase “purely symbolical payment”) and an over-reliance on personal experience has resulted in our mediated experience being treated either as nonsense or “irrational preference”. The solemn tabulation of others’ experience in a sociological manner tends to exalt this to an apparent objective and established order, while it remains no less opinion because it is multiplied opinion. The crisis in communication arises less from out-of-date and insufficiently exact symbols than from a lack of understanding of symbolical method; and sometimes disagreement with the pre-suppositions of a symbolic method is covered by a smoke-screen of abuse of the method. A naturalist view of communication leaves out the inherent contradiction within the natural order; it does not take into account the inevitable progress, in a universe whose logical working has been impaired by the absurdity due to evil, from Incarnation to Crucifixion. To meet such a contradiction in the depths, the Bible as Revealed Word of God provides a correcting principle, containing a number of paradigmatic situations, *e.g.*, Nathan and David, Jeremiah going into Egypt, Our Lord and the Woman taken in adultery, and Stephen and his persecutors, that are analogous to our immediate situation, but stand as revelatory. These Biblical situations are discovered by close attention to the text, and meditations within the life of the Church and a tradition of the Faith; but are to be applied to our situation with authority, both from God understood transcendently “Thus says the Lord”, and immanently as in Calvin’s *Internal witness of the Holy Spirit*.

The work done on Protestant visual icons often seems jejune—Rembrandt is by far the most interesting in the painting tradition, and here Visser t’Hooft, translated by R. Gregor Smith *Rembrandt and the Gospel*, S.C.M. Press 1957, seems to have little success in evaluating the creative Biblical insight of a visual kind. Newton’s treatment of Rembrandt’s religious art in *The Christian Faith in Art* (pp. 190–197, Hodder & Stoughton, London, 1966) seems to be more perceptive. Here is an artist living within a Christian tradition, who teases out from the technical complexities of his art, and his own experiences of life, a view of Man transfigured, which neither deifies him, as in Michaelangelo, nor imprisons him in flesh as in Francis Bacon. Only as we move into a Plural (or is it just a disintegrating?) society, further from the attempt at an integrated Christian civilization may it prove possible to see the work of such apparently secular artists as Constable, Crome and Jane Austen as related to a Christian sense of limitation; and as arising from an

integrated Christian form of life. Where a Romantic view of sensibility overcomes reticence, this is closely allied to a "triumphalist" view of nature, leading to a disillusioned reaction to a Sentimental or flat naturalism (c.f., of Delacroix, Charlotte Brontë and Fuseli, with Frith, Stendhal and Watts). What is to be symbolised has split between subjective and unduly objective.

One of the most successful literary icons of the Twentieth Century seems to be Pasternak's *Dr. Zhivago* where a unity has been recaptured; here the icon of God is the whole work. The means of its apprehension is Simone Weil's "attention", the addition of purely visual elements in the film diminishes its stature, and the whole only begins to emerge through a careful reading of the words.

This attention to the word is characteristic (and may remain characteristic) of the Benedictine direct meditation on Scripture, rather than the Ignatian analysis of material in order to impose a visual and controlled image upon the material. While such an instance further stresses that no line can or should be drawn between Protestant and Catholic spirituality—the interaction between the seen and the heard is one that brings out the fullness of Christ. One of the current weaknesses of Christianity is to interpret the authority of the Word in purely subjective terms (whether in experiential terms in Evangelical circles, or in terms of its cultural assimilability in Radical circles). In Anglo-Saxon circles authoritative paradigmatic situations based on the Word of God are not going to oust in a moment the deeply ingrained idea of morally instructive stories, but it would be tragic if a new form of Christian presentation, like *Theoria to Theory* were to become detached from the historical mediation of Christianity which remains through the word of Scripture.

Yours sincerely,
ANTHONY HERBERT.

St. Cuthbert's Vicarage,
Western Hill,
Durham City.

Reviews

Recent Literature on Icons

Sacrament and Image, essays in the Christian understanding of man, edited by A. M. Allchin for the Fellowship of S. Alban and S. Sergius. 7s. 6d.

The Meaning of Icons by Leonid Ouspensky and Vladimir Lossky, translated by E. Kadloubovsky and G. E. H. Palmer, with a foreword by Titus Burckhardt, Urs Graf-Verlag Olten, Switzerland (obtainable through Zwemmer at £6 10s.).

Those who are sufficiently interested by the unexpected aspect of Eastern Orthodox theological thinking opened up by some of the references in Margaret Masterman's articles on "Theism as a scientific hypothesis" to require some further information, will find first aid in *Sacrament and Image*. This contains Philip Sherrard's "The Art of the Icon" to which reference was made in I, 1 (p. 81) and more of the background relevant to the note in I, 3 (p. 249). There is a straight account of "icons", as they are commonly understood; the point is made that what is important in them is "what is intrinsic and constant in spite of . . . all variations due to the individual personality and the cultural environment of the artist", and that this is conceived as "projecting or reflecting itself on to the material of the icon". So far this could be Platonic. It does indeed imply the idea of an archetype imperfectly expressed in the materials of the world. In Ouspensky's introduction to the larger and much more formidable book the icon is described as "a likeness not of an animate but of a deified prototype, that is, an image (conventional of course) not of corruptible flesh, but of flesh transfigured, radiant with divine light. . . . A temporal portrait of a saint cannot be an icon precisely because it reflects not his transfigured but his ordinary, carnal state".

The difference between this and Platonism is a main theme in Ouspensky's essay, written in the Soviet Union and supported by impressive quotations from V. N. Lazarev, whose *History of Byzantine Painting* was published in Moscow in 1947. It is Lazarev who insists that Christian art "evolves for itself a series of individual tasks from the beginning of its existence. It is by no means a classical antiquity Christianized. The new thematic content of early Christian art was not purely external fact. It reflected a new outlook, a new religion, an understanding of reality that was new

by origin". At the heart of this was the new man, the new Adam, conceived not as an archetype but as a presence, made known in the world through changes in men and women, through a "transfiguration" that will not be visible to the undiscerning eye, but can be seen and portrayed by those who have eyes to see. It is this transfigured body of Christ and the saints that the icon represents.

Two papers in *Sacrament and Image* present this idea, "the transfiguration of the body" by Kallistos (Timothy) Ware, and "Body and matter in spiritual life" by Archbishop Antony Bloom. Ware considers the tension between this and Platonic dualism in the thought and activities of the desert fathers. The practical consequences of a positive attitude to the body are to be seen in the state of health ascribed to S. Anthony at the age of 105: "His eyes were undimmed and quite sound and he saw clearly; of his teeth he had lost not one, but they had been worn down to the gums by the great age of the old man". Ware also summarizes the theoretical teaching of Gregory Palamas, who in the fourteenth century "went so far as to argue that the fact that man has a body makes him not lower but higher than the angels. Human nature, being more complicated, possesses greater potentialities than the angelic. Balanced as he is between the physical and the non-material realm, participating at the same time in both worlds, man is a microcosm and mediator, forming a bridge and point of meeting for the whole of God's creation".

Ouspensky in his larger and more difficult essay shows that the basis of this is not so much the Christian doctrine of the incarnation as the likeness of Christ which doctrinal definitions attempt to analyze. Man "assuming the likeness of Christ, . . . becomes 'the temple of the Holy Ghost' . . . re-establishes his likeness to God. Human nature remains what it is—the nature of a creature; but his person, his hypostasis, by acquiring the grace of the Holy Spirit, by this very fact associates itself with Divine life, thus changing the very being of its creaturely nature. The grace of the Holy Spirit penetrates into his nature, combines with it, fills and transfigures it. Man grows, as it were, into the eternal life, already here on earth acquiring the beginning of this life, . . . which will be made fully manifest in the life to come". He goes on to say that "the revelation of this future transfigured corporality is shown to us in the Transfiguration of our Lord on Mount Thabor". There "not only does the Deity appear to men, but manhood appears in Divine glory. A man who has acquired the grace of the Holy Spirit becomes a participant of this Divine glory", which Gregory Palamas called "uncreated and Divine radiance".

The place of this image of the transfigured, the risen Christ in the Christian tradition is independent of disputed questions as to the attitude of early Christians, both Jewish and Gentile, to representative art. Archaeological discoveries have shown that the Jewish attitude in the early Christian centuries was not uniformly hostile to religious pictures, and some of the earliest paintings in the catacombs do at least show that the Christian attitude was not entirely negative at the end of the second century. But even if the image of Christ was never painted or carved before the time of Constantine—and this seems most improbable—his likeness would still be central to the formation of the Christian picture of man and his place in the world.

This is the relevance of Vladimir Lossky's essay on "Tradition and Traditions" to a book on *The Meaning of Icons*. Lossky begins with an analysis of Catholic and Protestant differences on the relation of Scripture and Tradition. These have been attenuated since his essay was written in a direction which tends to annihilate the difference between them. And indeed it may be argued that the whole tendency of controversy as well as of conciliation since the Reformation has been to do this. But in the East where the sense of belonging to a living tradition shared with the Christian fathers, and at least through them with the apostles and martyrs, has come alive again in the sufferings of recent years, tradition is not a deposit but a way of knowing: "It is not the content of Revelation, but the light that reveals it; it is not the word, but the living breath which makes the word heard at the same time as the silence from which it came; it is not the Truth, but a communication of the Spirit of Truth, outside which the Truth cannot be received". A little later Lossky goes on to say that "if the Tradition is a faculty of judging in the Light of the Holy Spirit, it obliges those who wish to know the Truth in the Tradition to make incessant efforts: one does not remain in the Tradition by a certain historical inertia, in keeping as a 'tradition received from the Fathers' all that which, by force of habit, flatters a certain devout sensibility". He goes so far as to say that "any theological doctrine which appears to be a perfect explanation of the revealed mystery will inevitably appear to be false: by the very fact of pretending to the fulness of knowledge it will set itself in opposition to the fulness, in which the Truth is known in part". I am sure that for Lossky this did not involve any diminution in his respect for dogmatic definitions. Indeed his regard for some of them is seen in other places in the same essay, but also his sense of their historical context and his distaste for the accumulative use of collections of them.

His essay and two by Ouspensky on "the meaning and language of icons" and on the "technique of iconography" introduce a series of illustrated studies of the main types of icons in which the two scholars collaborated. The illustrations include, with some other excellent photographs, a folded "panorama" of a portable iconostasis of the sixteenth century, Russian, but now in America, many diagrams, and a few reproductions in colour. It is these particular studies that explain and justify the cost of the book. No doubt they have been of great use to those concerned with the renovation of Byzantine art in Eastern European countries, many of whom find in this a life-line to maintain some connection with a vanished past, and these will also learn from the introductions. Those whose concern for Byzantine art is not sufficient to justify the purchase of this book, which will not be in many libraries, will find an historical analysis of the roots of Byzantine spirituality in the last pages of Father Gervase Mathew's chapter on "the Christian background" in the new fourth volume of the *Cambridge Medieval History*. This is in part i (1966). A valuable survey of later developments by Professor J. M. Hussey and T. A. Hart is in part ii (1967).

GEORGE EVERY, S.S.M.

Le Mont Analogue, by René Daumal (Librairie Gallamard, Paris). English translation, *Mount Analogue*, by Roger Shattuck (Vincent Stuart, London).

René Daumal was born in 1908 in the forests of the Ardennes. He was immensely precocious, both in intellect and in questioning awareness. He described his youth later to his physician :

"From 15 to 17, at Reims, I began to have doubts, to question the basis of everything. Without giving up my naturally healthy liking for nature, the open air, etc., I began to perform all kinds of experiments 'in order to see'. Along with a few friends (some of the brightest pupils in the lycee but all a little wild) I tried alcohol, tobacco, night life, etc. I tried knocking myself out (with C14 or benzene) in order to study just how consciousness disappears and what power I had over it. I became interested in poetry (the poète maudit tradition) and philosophy (the 'occultist' tradition)".

He learnt Sanskrit by himself, and translated Sanskrit texts into French. He published avant-garde poetry. At twenty, he helped to found a lively literary review. When he was 24 he married

Véra Milanova, a woman deeply in sympathy with his ideas. He began writing *Mount Analogue* after the fall of France but the book was cut short when he died in 1944. It was virtually unknown in England until last year. Then it was suddenly found to be the fashion at an English public school. Last summer everybody there was reading it. From there it was taken up by the hippie public generally. It is a curious history.

Mount Analogue describes symbolically the mystical path that Daumal set his heart on. All mystical paths, of course, are the same path, but each description of it is different. *Mount Analogue* is a very valuable book because Daumal, though he was a visionary and a genius, had no illusions about the nature of mysticism. Roger Shattuck, in his introduction to his translation into English of *Mount Analogue*, mentions a letter that Daumal addressed to Jean Paulhan : "I ASSURE YOU THERE WAS FIRE AROUND US IN THE AIR". Yet two pages later he writes with equal vehemence, "We must first become human before seeking anything superior".

The book is wonderfully assured : it is a high-spirited story about people seeking mystical liberation. The mystical path is incarnate, at any rate in the first part of the book, in the person of Sogol: follow Sogol and you follow the path. Sogol is a tamed buccaneer who attracts round him a group of people who seek *Mount Analogue*. This is the mountain providing the path for man between earth and sky, which symbolises the path between mortality and sanctity, and which must exist because the path must exist. That is to say, its base must be accessible to man, but its summit inaccessible to man as he is in the world: he must change his nature to be able to get to the top.

The group of seekers decides that the mountain is on an island in the South Pacific. When they are sufficiently "prepared", in that they have lost some amount of their attachment to the world, they are able to reach the shore of the island. There they have to learn with humility how to fit into the new scheme of things : life on the island is directed towards escape from the world (and one doesn't censure people in prison for escapism). But the escape must be on the proper lines; there are no short cuts. When they arrive on the island, the seekers are straight away absorbed by interest in the place; they start on programmes of study and self-indulgent edification. It is a rude shock for them when the Mountain Guides rouse them from this "escapist" torpor and send them packing up on the proper ascent. Sogol renounces his leadership of the group : now that they are actually on the path, each person must make his

own effort. He is rewarded by finding a “peradam”, one of the valuable stones of the island. They begin the ascent; but they have only been going a day or two when the book is cut short.

The practical comments on the emotional problems felt by everyone in the group, and the concrete description of their life, make all this seem real enough. So real that Daumal does not need to apologize for the following passage :

“... Our attention was constantly being caught by a blue squirrel, or a red-eyed ermine standing erect like a column in the middle of an emerald clearing spattered with orange agaric, or by a herd of unicorns which we had first taken for chamois and went leaping across a bare outcropping on the opposite slope...”.

Yet one feels it is no good; one feels that the book is too much of a fling, that when you try and take the ideas out of the book-covers they fall to bits. The trouble is that, symbolism apart, Mount Analogue just does not exist: you do not just decide, with a few friends, to set off, start up the path, and climb on. There is no simple process for self-transformation; you cannot just read the sacred Sanskrit texts and “arrive”; that is an intellectual abstraction, of the texts from the learning, or of the path from the life.

In the East there is a traditional framework for the seekers to work in; but the tradition has not come to Europe with the ideas. I cannot speak for Western Mysticism because I am concerned with the Eastern method rather than any other; but as far as I can see, the traditional framework that is in the West does not provide a path for transformation of the self, but rather a direct calling to God. Moreover the path in the East is a purification rather than a transformation of the self. Mountain-climbing is a process of achievement rather than of purification; Daumal’s symbolism is out in the cold, neither East nor West.

BEN WINT

SENTENCES*

*To win love's chase, I took my way
And, full of hope, began to fly.
I soar'd aloft and soar'd so high
That in the end I reach'd my prey.*

1. *To gain at last right royally
The battle when the flight was o'er,
So far aloft I had to soar
That my own self I could not see.
So fiercely strove I on that day
My strength grew faint and weak indeed
But love sufficed for all my need
And in the end I reach'd my prey.*
2. *The dreadful force of dazzling light
Blinded me as aloft I flew;
The greatest gain that e'er I knew
Was made in blackness of the night.
But love it was that won the day;
Blindly, obscurely, did I fly;
I soar'd aloft and soar'd so high
That in the end I reach'd my prey.*
3. *The farther upward did I go
In this great chase of love so high
The baser, humbler soul was I,
The more exhausted did I grow.
'No hope!' was all that I could say,
But, as I sank and sank so low,
Higher and higher did I go,
And in the end I reach'd my prey.*
4. *In ways no mortal can explain
I made a thousand flights in one,
For he that hopes to reach the sun
His heart's desire shall surely gain.
Naught had I hoped for but this day
And hope impell'd me up to fly.
I soar'd aloft and soar'd so high
That in the end I reach'd my prey.*

* Poem VI from *The Works of St. John of the Cross*, Vol. II, p. 452, translated by E. Allison Peers, London, Burns Oates & Washbourne Ltd., and reproduced by kind permission of the publishers.

NOTES ON CONTRIBUTORS

Evelyn Derry graduated in history from Somerville College, Oxford. She has spent most of her professional life as a minister of the Christian Community Church within the movement started by Rudolf Steiner. She has written and travelled, giving special attention to the psychological aspects of the work, and has met problems of stress in great variety.

Guy Wint read Philosophy, Politics and Economics at Oriel College, Oxford. He has travelled extensively in Asia and is now at St. Anthony's College, Oxford, having been disequipped from his former life as a journalist through having a stroke. Author of *India and Democracy*, *The British Asia*, and *The Third Killer*.

Hubert L. Dreyfus teaches contemporary continental philosophy at Massachusetts Institute of Technology. He is the translator of Merleau-Ponty's *Sense and Nonsense*, and author of *Husserl's Phenomenology of Perception*, to be published by the M.I.T. Press. He is at present working on a critique of artificial reason of which this article is a part.

John Beattie is senior lecturer in social anthropology at Oxford University, where he is a fellow of Linacre College. Before becoming an anthropologist he read philosophy at Trinity College, Dublin, and then spent eight years as an administrative officer in Tanganyika. He is the author of *Bunyoro: an African Kingdom* (1960), *Other Cultures* (1964), and numerous papers.

Frank Rendall has recently retired from the Diplomatic Service. He studied at Cambridge as a Byzantinist, and while in the Foreign Service was in Vietnam from 1954–1957, and more recently was engaged in work on China. He is at present writing a book on the origins of the Sino-Soviet dispute, to be published by the M.I.T. Press for the Centre for International Studies, Massachusetts Institute of Technology, to which he was attached as a visiting scholar during 1966–1967.

Yorick Wilks read Mathematics and Moral Sciences at Pembroke College, Cambridge. He is now in California "persuading a computer to examine some philosophical arguments".

Richard Saumarez Smith read Mathematics at Cambridge, and is now studying Social Anthropology.

Winifred A. Coate, M.B.E., is the founder and leader of the Abdelliye Village Project, near Zerka, Jordan, which she started after retiring as a missionary of the Church Missionary Society. Educated at Bedford High School and Westfield College, London, she went to Jerusalem in 1920, taught there and in Cairo, and for 14 years was Principal of the Jerusalem Girls' College. Since 1948 she has lived in Zerka, where she has been engaged in unofficial activities for the relief of Palestinian Arab refugees.

Margaret Bremridge graduated in General Science at London University and was engaged in secondary education in Jerusalem and Amman from 1931–1942. After this she taught in South Africa, and was interested in the geographical similarity of the Transvaal and the Jordan territories.

Michael M. Hare, American architect turned philosopher, was educated at Yale and Columbia. For many years he was consulting architect to the Association of College Unions. During World War II he served in

the Pacific as an officer in the U.S. Marines. Subsequently his firm designed public buildings, including U.S. embassies. In 1955 he turned to problems in the philosophy of design, and then to the philosophy of science. Author of *Microcosm and Macrocosm, an Approach to the Synthesis of the Real* (New York, Julian, 1966).

George Every is a lay brother, tutor and librarian of the Society of the Sacred Mission. Author of *Christian Discrimination, The Byzantine Patriarchate*, and *Misunderstandings between East and West*.

Ben Wint is a first year Moral Science undergraduate at King's College Cambridge. He spent three months last winter in a Buddhist monastery in North East Thailand.

John Dobson, who designed the spirograph on the cover, read Mathematics at Trinity College, Cambridge, and is now teaching and researching in Computer Science at Rolls Royce Ltd., Derby.

China: Yellow Peril? Red Hope?

C. R. HENSMAN

This book takes a new look at the China problem. It is written by an Asian Christian, but is not addressed solely to Christians.

The author builds a firm foundation of facts about the Chinese People's Republic; how they live, what they think, how the outside world appears to them. In the light of this he then looks again at the world outside China, not only at the political, but also at the moral issues presented by the resurgence of China under Maoist leadership. Their frame of mind behind this resurgence is not necessarily a bad thing; it may be just what is needed today.

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HERBERT W. RICHARDSON

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Dr Richardson is a Professor at Harvard Divinity School, and a colleague of Harvey Cox (whose book *The Secular City* is available as an SCM Cheap Edition, 13s 6d).

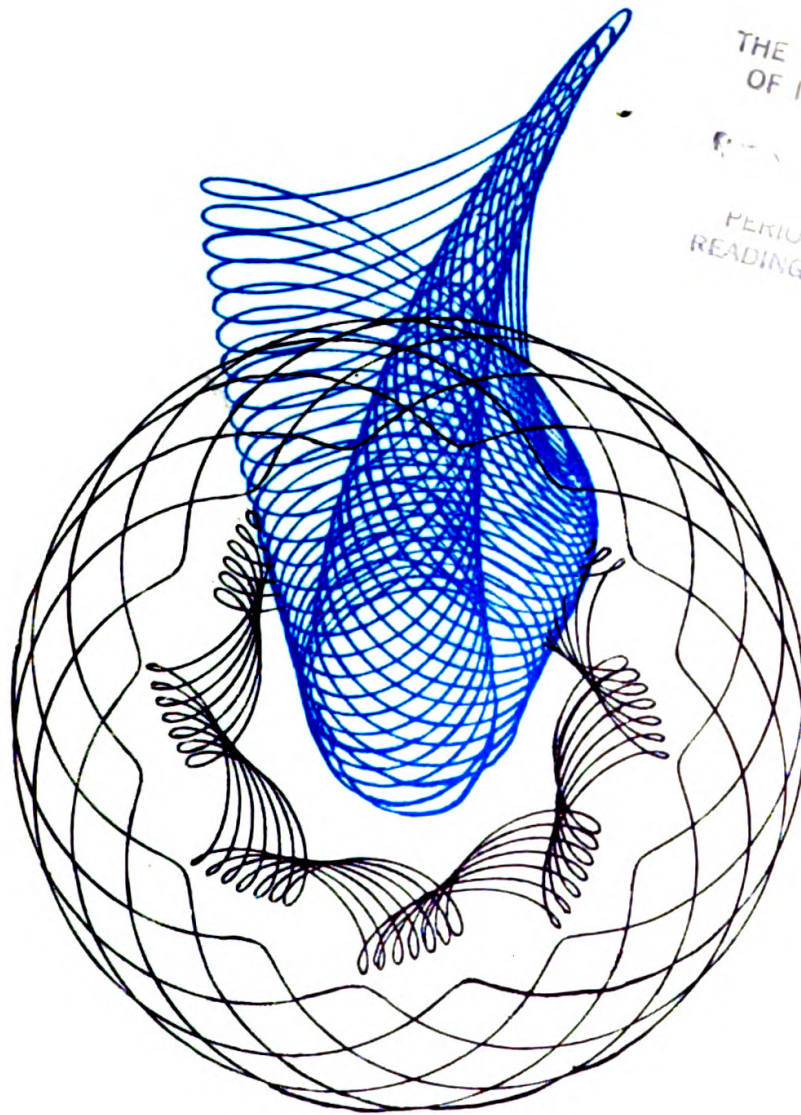
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Printed by W Heffer & Sons Ltd Cambridge England

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THEORIA TO THEORY

Theoria to Theory is published for the Epiphany Philosophers by Pergamon Press, Oxford, London, New York, Paris, Advertisement office : 4 Fitzroy Square, W.1 (01-387 4455). Subscriptions and orders to : Subscriptions Dept., Pergamon Press Ltd., Headington Hill Hall, Oxford (64881). 7/6 a copy; annual subscription (for 4 quarterly issues), U.K. only 30/-, U.S.A. and Canada \$5, other countries 35/-.

Editorial correspondence, submitted articles, and books for review should be addressed to The Editor, *Theoria to Theory*, 9, Marion Close, Cambridge.

Editor : Dorothy Emmet.
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The publisher reserves the right to dispose of advertisement colour blocks after twelve months, monotone blocks after six months, with or without prior notification.

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THEORIA TO THEORY

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Editorial

The society in which we live is the inescapable background of the issues of science and religion which are our main concern in this journal. Our present society (more than past ones?) contains problems to which there are no discernible answers. Edmund Leach called his Reith Lectures "A Runaway World?" (does the question mark suggest it is not yet completely out of control?). In what he has written for us here he accepts Alasdair MacIntyre's description of the Reith lectures in a television interview as "a secular sermon", remarking that sermons are meant "to get people talking among themselves". (Would that more non-secular preachers of sermons saw their function like this!). Readers may notice that those who comment on him in this number have names which have already appeared in the journal, and complain (as they did of our first number) "In-group discussion". Why not? A three-some discussion of this kind is not meant to be three disconnected reviews, but a symposium in which points can be considered and divided out beforehand. If any other "in-group" likes to mount a three-some on some book or lecture of controversial interest, and get the author to reply, we shall be very glad to consider publishing it.

* * *

The Dialogue on Black Power illustrates a theme raised last time : the breakaway from democratic constitutional procedures into anarchism or the politics of desperation in a direct action form. We used to be told that the price of liberty was eternal sitting on committees. Increasingly people are looking for something more rapid and more forceful. The Black Power movement is no comic "Black Mischief". It has to be taken extremely seriously. That a black minority could establish a revolutionary government in this country is no doubt not on. But people who are prepared to use violent means, and if necessary suffer extreme penalties for doing so, will make a movement potent even when it seems Utopian. It is also the case that those who take a vow of violence in a dedicated way will unleash a runaway process whose effects will be unpredictable (except for those who think the future course of history is set in a Marxist pattern). When the syndicalist Sorel wrote in "Reflections on Violence" of the power of symbols stirring to violent action in creating mass political movements, his thunder was stolen by his one-time pupil Mussolini in the interests of the Right instead of the Left. This kind of reaction can always happen.

Another, and more encouraging one, was recorded in one of the recent articles in *The Times*, which appeared while our dialogue was in the press : some of the police in Notting Hill are finding ways of consulting over community problems with Black Power leaders.

However, there is an ideological difficulty. Roy Sawh makes clear that Black Power must be seen as an international movement. When everything has been said in support of the demand that racial grievances should be seen in a world context, it remains true that Western Liberals, and indeed many Afro-Asians, who are seriously opposed to racial discrimination, will be in a quandary, if as seems possible, the leaders of the coloured people make the demand that sympathizers with their cause should submit to the leadership, and accept the ideology, of such international figures as Fidel Castro and Mao Tse Tung. Michael Dummett shows the predicament in which this places them.¹

* * *

For our "adventure story" this time we are publishing a lecture given by Alec Dickson, the founder of Voluntary Service Overseas, on some of the varied and imaginative forms of service undertaken by young people who have got well beyond the notion of "doing good" in the pejorative sense in which such services have sometimes been so described. In a world of so much violence here is something to encourage us.

* * *

We continue our series of articles bearing on Sir Alister Hardy's Gifford Lectures, *The Living Stream* and *The Divine Flame*, this time not by direct comment, but by re-printing a paper by C. H. Waddington, which gives another way of seeing some of the same issues. Waddington believes (and Sir Alister agrees with him) that orthodox Darwinian views of Natural Selection have underestimated the importance of what he calls the "exploitive", as additional to the genetic, system in Evolution. Members of species venture into environments in which they may acquire habits to meet the problems these set. Then the hereditary make-up of those who have shown the capacity to respond to stress through these habits will be favoured by Natural Selection. (Does this bear on our

¹ [Stop Press] The tragic news of the assassination of Dr. Martin Luther King makes the future still darker. Might the very horror of the situation rouse people of all races to make a new creative effort to meet it? But "From needing danger to be good, From owing thee yesterday's tears today" (See p. 274).

theme of the positive value of stress, where human beings who are prepared to be put in situations of stress, may develop or awaken otherwise unused capacities?) The main difference with Sir Alister is that Waddington holds that human beings (whose culture he sees as part of Evolution) need to be able to receive and accept socially transmitted information, and this he thinks provides a basis for ethical development in a way which does not call for any special spiritual factor. (His views are given more fully in *The Ethical Animal*, Allen and Unwin, 1960.) Next time Sir Alister will be replying to all three articles in the series, and we hope will be showing why he differs from Waddington. Readers who would like to join in the debate are invited to send in comments. This applies also to other controversial matters, such as those in the "Black Power" Dialogue. If comments reach us within a month of the appearance of a number, they can be printed in the next one; if they come later, they have to wait for the number after that. So if you want running commentary, please write soon.

Dialogue between Roy and Michael: Black Power

Roy Sawh, Organizer of Black Power in London; Michael Dummett, Fellow of All Souls College, Oxford.

Michael: At least when the Black Power movement began in United States in 1966, there was a distinction generally accepted between Black Power and Black Nationalism. Black Nationalism, as I understand it, arises from either of two ideas : that racial prejudice is ineradicable from the minds of white people, so that a just multi-racial society including whites is an impossibility; and that white civilization is inherently corrupt, and to be integrated in it would be to become tainted by that corruption. Hence the only course for black people in a country with a white majority is to retreat to enclaves in which they can separate themselves from that majority.

Black Nationalism is based on a long-term rejection of integration : as against the Black Power idea, which was merely the discovery that, in the existing situation, it was damaging to take it, as the *present* objective. Only the elite in the ghettos could benefit from a removal of the practice of discrimination in the wider community : to the masses, unable to escape from the ghetto, it was irrelevant—what they needed was to control their own lives instead of being the victims of exploitation even within the ghettos. As for the long-term ideal—what the society should look like when the struggle was ended—the Black Power movement gave no answer to this, and was not much interested in asking the question.

Now it seems to me that this distinction has not been drawn in this country: and I have sometimes thought that the Black Power movement in Britain is much closer to Black Nationalism, as I have described it, than to the American Black Power idea, at least in its original form. If you accept my description of these ideas, to which do you see yourself as closest?

Roy: The term “Black Power” came from the Southern United States, but as a concept it originated many years ago. It means the arousing of black people’s consciousness to examine their position in the societies in which they live. The Black Nationalists have the objective of controlling the communities in which they are in the majority. But they will still be under a white power structure. We in Black Power say that if you want independence, you must have

your own laws and ethics. Part of our trouble is that we are in Christian societies according to the symbolism of which "white" is associated with everything that is good and "black" with everything that is bad. We do not preach the annihilation of the white races, or violence in the sense of telling black people to kill white people. We say that if white people have groups like the army and navy to kill our people, then we must organize to defend our rights. We see the world as a world dominated by white power structures with names like N.A.T.O., S.E.A.T.O., C.E.N.T.O., Comecom. and E.E.C.

Michael: It's clear that white racialism originated as an instrument of imperialism and further that imperialism is far from ended; I also entirely agree with you that the problems arising out of white racialism cannot come to an end until the continued exploitation of other races has also come to an end. One cannot understand racialism in one country without being aware of the international situation and of white people's attitudes towards the nations of Africa, Asia and the Caribbean: how people interpret events in Vietnam, Aden, etc., affects their behaviour to black people in this country. So I'm not denying the interconnection between racialism in this country and the political, economic and military power of Western nations. But once you have people conscious of the overall unity of their struggle with people in other parts of the world, what are they to do in a country like this where they are in a minority—and where the tactics appropriate to countries under colonial domination aren't appropriate?

Roy: We don't accept the approach that we are a minority; we are 87 per cent. of the world's population. Our immigration problem is part of a world problem. We believe we must have international links, and an international chain reaction, to be effective. The frightful thing is that when all this explodes innocent people are going to be killed. I myself abhor this, but I don't look on it as a personal matter. People are being killed now in Vietnam. If we want to make our point we can't just shoot. We have no rockets to direct to New York or Florida. We must destroy the system that keeps us under. This could be avoided if white societies gave aid to black societies on the same scale as it was given to the white ones under the Marshall plan.

Michael: There are many people who might disagree with your thesis about the international aspect of all this. I'm not one of them. It is very obvious that Asian and African nations don't have as much power and prestige as white nations; it is impossible for most white people not to think in the way you complain of—e.g. of

themselves as "giving" freedom and independence to people of other races. The whole perspective would be changed if it was clear that among the great military and economic powers were certain African and Asian nations, and I agree that where black and white people are living together things won't be right until this happens.

Roy: I am a Marxist, and I believe the masses, whether black or white, could unite, but the workers in this country share in the advantages of exploiting black people. Moreover, no black mercenaries could go into a white country and tell it to negotiate, as white ones did in the Congo. Black people haven't power to do this. If power is the deciding factor, it would be better for everyone to have some, and then perhaps they would have a better understanding of each other. America and Russia each know the other has power, and now they are talking to each other. I believe people tolerate each other when they have power because both are equally afraid. The United States carried out propaganda in the cold war to the effect that if you dared talk about peace you were a Communist. When the Russians had the bomb, they were accepted as part of Europe. Now the Chinese are said to be thinking like white people because they have the bomb, and we in Black Power support them in having it. Indeed the problem might be solved by giving black people a finger on the bomb. If in order to prove you are a civilized human being you must have power, then we had better get some.

Michael: I entirely agree with what you say about the international aspect. Attitudes in this country would be very different if it were not the case that people find it quite natural that white troops should land in the Congo but inconceivable that (say) Mali should land troops in France to suppress a move to oust de Gaulle. But I am still completely at sea about exactly where we differ about what should happen in this country. Once you have been convinced that this is an international problem and not a national one it remains the case that not much can be done by people living in this country about whether African nations have an H bomb or about the political economic power of black nations. What line of action does being aware of the international aspect immediately lead to?

Roy: Once we accept that there is this international aspect what we would like to see in this country is a "central interest organization", representing black people for we see that this country is going on the Swedish pattern of Organizational Government. The T.U.C. will represent the workers and the C.B.I. the employers. We would also like to see a coloured community which will have

the same norms as other societies, i.e. we will control political power and, to a certain extent, economic power within our own community. Black people in this country are spending about £520 million a year. If we had co-operatives in which black people could be employed by us, we should be creating our own employment within these co-ops. These co-ops could be started by coloured people for coloured people and out of the profits we could set up a housing trust, thus solving a part of our housing problem. But we do not see how a British government that has a racial policy towards black countries will have a modified racial policy towards black people in Britain. We think that in organizing ourselves as an immigrant group we should put more emphasis on the international struggle and bring home to the British Government anything that affects black communities throughout the world. By having a certain amount of political power within the establishment we are not meeting the problem; we are only modifying it. You know that during the war a number of people came and fought for this country, in British uniform, and after the war a mass immigration has come in response to an appeal for labour by the ruling classes. We came thinking that we were British citizens and that you had a democratic society and we did not expect discrimination. What do we find? Look at British transport : we are doing a damn good job as far as the establishment is concerned; but it is very difficult to get promotion. We have still to see a black inspector on British transport. We see this as classifying black people into certain categories. Look at nurses : our nurses are called "State Enrolled Nurses", whereas yours are called "State Registered". If black people in this country are going to get any respect we have got to organize racially.

Michael: Yes, I know it is like that. For instance, there has been only one black inspector on the buses in the whole country and that one was beaten up and had to give up the job. But where I think I differ from you is on what would be an effective way of tackling this. It seems to me plain that the black community in this country cannot themselves generate opportunities; there is not going to be a bus company run by black people for black people.

Roy: We are not saying we want black buses so that we can have black bus inspectors. What we are saying is that society only uses black people in certain categories.

Michael: What can we do to overcome this?

Roy: The way I see it is that we do not see that there is enough scope through the British parliamentary system to change the

society and people's attitudes towards the black community. We must look into other directions.

What we need to bring home to white liberals—I prefer to call them “genuine white people”—is that the black people have looked to the white people for advice as to what they should do from time immemorial; now *they* must consult *us* and we shall tell them what we think they should do. They should come to us and ask us, “how do the coloured people see the problem”. We shall tell them that because this is a racial society we must organize racially, not because we are racialsists but to protect our national interests, in the same way as white people have organized to protect their national interests.

Michael: Inevitably we constantly draw parallels with the American situation: but in America there was a stage intermediate between that in which people tried to act through the courts, and the rise of the Black Power movement—namely that of the Civil Rights movement which brought pressure on local sources of power by direct action in which white people participated. Does this recommend itself to you as a possible line of policy, or is this hopeless?

Roy: In the United States even in parts where the black people had their own representatives and where they tried to use constitutional means, they found that there were people at the centre that manipulated it to suit themselves.

Michael: Let us go back to this example you took of no inspectors on buses. This is manifest injustice, that people can work for 15 years and not get promotion. I take it that by constitutional means you mean things like pressure on members of parliament to introduce a race relations act which would apply to conditions of employment, and a race relations board to whom you can put cases of discrimination. It seems to me not proved that this is ineffective.

Roy: No, Michael, I am not against any kind of reform that might achieve something. But you see, what I am saying is that we have seen the Race Relations Act of 1965 in fact used against us, so what confidence can we have in another act which the government might bring in?

Michael: Well, of course, it comes too late because people have already despaired of such means. What is more, we know that however good the machinery was that was established under the Act, it would not work without voluntary pressure groups who would bring cases and get evidence so that they could be proved. In most cases where there is discrimination you have got to take

the action to prove discrimination. This means very active groups prepared to carry out testing the moment someone reports to them that he suspects he has been discriminated against. But suppose we imagine we have not got a race relations act or at least one that is not working properly, and you are still faced with your bus company that denies promotion, what should you do?

Roy: Do you know what you will find you will have to do? The genuine white people who have tried all these constitutional means and found that they do not work will have to turn to the black people and say: "What ought we to do?" This is the thing that frightens me, because when the white people come to think that violence is the only means, the black people will say that they have known this from the beginning. Look at the Afro-Americans in America: they have waited for 300 years and we saw what happened. Are we going to wait for another 300 years? Violence can bring something. In America, in Detroit, since violence has been used things have happened. In this country 50 years ago when the suffragettes were prepared to use violence their claims were taken seriously. This country is vulnerable to violence.

Michael: The point I want to make is this. If the Black Power movement in America is justified, it is justified because the Civil Rights movement failed, in both its stages (constitutional pressure, and direct action). This movement won many battles, but to win the campaign it needed to arouse the conscience of the white majority so as to transform the whole society: and in the end it could not do this. But you, by missing out the second stage, that of direct action, and going straight from constitutional pressure to Black Power, are taking a step that cannot yet be demonstrably justified.

Roy: I think we have passed through that stage. One thing we should not forget is that the West Indies are the Southern States of Great Britain. You cannot blame us for wanting to take a quicker road to achieve our rights. You may ask about Gandhi and non-cooperation, but a small minority cannot bring the government to a standstill by things like street demonstrations, particularly as they are not allowed to be held within three miles of parliament. They can always tell you to move on. And when the police tell you to move on, and if you ask, why? they can arrest you for obstructing them in the execution of their duty. I was very glad so many liaison officers were set up in this country between the immigrant communities and the police. That was a very good thing. I think I should say that the police always play on the ignorance of the immigrants in not knowing the British laws.

Michael: I think the basic problem is that no one in this country has found a way of mobilizing black people. It is only recently that people have found out how to bring people on to the streets in any large numbers. People are afraid of failure and of looking ridiculous. Consequently in this country, unlike the United States, there have not been any inter-racial organizations with a mass basis. Most of the organizations are split up into Indian, West Indian, Pakistani and so on and do not co-operate much together.

Roy: I do not believe that mass numbers in a demonstration are really what matters. If ten people are really prepared to demonstrate, and if necessary to lose their jobs or get notice from their landlords, that in itself is impressive and shows they are prepared to do something. Propaganda from anyone who is Left can always raise mass hysteria but we do not see the need for this as yet. We still believe all these immigrant societies can play an important role but not under the present set-up. The trouble with the white people who want to help black people is that they want the black people to do what the white people say and this is why their name stinks with the blacks, particularly if the white people, because they give their money, think they can dictate what policies to adopt. The Black Power movement in this country, of course, has not got any money.

Michael: Can we go back to what we were saying? I agree with you that a lot of white people who have a vague idea that they want to "help" black people, and even those who have a certain amount of understanding, slip into the error of bossing you and condescending to you. Obviously it is a new idea to white people that black people have to tell them and that they have to listen. Now when you were saying that white people might eventually come to see that constitutional action was not working there was a buried assumption in this, namely that it is not to be expected that black people and white people can really work together on pressure group activities and in the main it is true that this has not happened. This is what I meant when I said there had not been effective inter-racial organizations in this country. I think there are two reasons for this. One is the natural tendency of most white people to think that their position should be one of leadership. The second is that the black people in this country on the whole have not given such organizations any real chance. They have not been willing to take positions of leadership.

Roy: I can tell you one reason for this: most coloured people when they came to this country supported the Labour Party and

the vast majority vote for it. Then we saw 250 amendments that were put forward by Hugh Gaitskell to the Commonwealth Immigration Act and Harold Wilson promised to repeal it, but what did he do? Harold Wilson enforced it much more rigidly. Remember that most black people come from what is basically an agricultural society. We took a plane ticket and arrived in a highly industrial society and we have adapted ourselves marvellously. We came believing in the solidarity of the working class movement and they let us down. This is the reason why we are not interested in these organizations run by white people any more.

Michael: That the direction the struggle against racialism should come from those who are its victims, and that the role of white people in this struggle is an auxiliary one, is something that was well understood in the Civil Rights movement long before Black Power emerged : so this cannot be the whole message of the Black Power movement. The trouble was that, despite all James Baldwin had to say about America's not being as such a white nation, even those white Americans committed to the Civil Rights movement could not—when, say, talking to a European—see Afro-Americans as “some among us”, but only as “they”. This failure is, again, part of the justification for Black Power in the U.S. Now in Britain we have communities differing in culture, language, religion, race and even colour. The more you try to unite them in a common consciousness of being “black”, the more you accept a principle of classification you have taken over from white racialism; and the more you run the danger of producing two communities standing on either side of an unbridgeable gulf.

Roy: We don't see white people as white, but according to whether they are with us in what we believe: the destruction of Capitalism. If the Black Power movement were to choose a world leader, we should want Fidel Castro. At present we have no leaders, only advocates. We don't believe white capitalist society will ever solve our problems. We therefore think we must destroy western capitalism.

Michael: What about Russia? Russia is not a capitalist country.

Roy: Russia is in fact a State Capitalism, and, as far as we are concerned, forms part of the white power world. We have not got the patience to intellectualize and go into pros. and cons. We want action. The whole world today is divided on racial lines. I repeat, Black Power is international, not national. But Britain and America are the bases of western capitalism, and the Black Power movement tries very hard to destroy this octopus, for the sake of the whole international movement. As long as we are in Britain or

America, you aren't likely to be able to drop a bomb on us and kill us off!

Michael: It isn't clear to me that racialism where it exists is always there because of *present* imperialist policies: it may exist merely as a hangover, which has no longer any functional role in promoting contemporary forms of imperialism. In that case, destruction of imperialism will not of itself eliminate racialism. Further, I do not know what is the connection between imperialism and capitalism; whether, as in Marxist theory, eliminating capitalism is a necessary, or a sufficient, means to eliminate imperialism. (Though I have already agreed that there must be parity of power and prestige before racialism can be completely eradicated.) Now there are a number of people here dedicated to the eradication of racialism. Are you going to face us with the demand: Acknowledge Fidel Castro, or Mao Tse Tung, as leader, or you can't come in with us at all? If so, I for one would be in a quandary. Or, again, it is a well-known position that the State of Israel is an outpost of Western capitalism, so if you are anti-imperialist you must be anti-Zionist. But if your movement says you must hold this, a number of people couldn't accept it, and this wouldn't apply to white people only. It would apply to Kwame Nkrumah, who prevented the first meeting of the Organization for African Unity from passing an anti-Zionist resolution. So your particular Marxist analysis could have a divisive effect on the struggle.

Roy: We believe in this wider context because we see this struggle not just as a racial civil rights movement, but as a *human rights* movement. If we see the problem like this, we see ourselves as fighting a society which keeps us down and shows us its prejudices. If white liberals are going to help us establish our civil rights by conforming to the status quo, then we will just be another minority group. I see the difference between us and the dedicated white people to be mainly one of the ways the problem is to be faced. I don't think black people have any right to accept moderating or conformist attitudes. I think the white liberals have got to ask themselves: Do they want to bury racialism or do they only want to moderate it? And this is a question only the white liberals can answer. I am afraid I can't.

Michael: It seems to me you run the danger radicals in any context run, if you say nothing can be done until the whole society is transformed, of doing nothing: since the prospect of transforming the whole society is so slight. Even if you are correct in saying racialism can't be eradicated until the capitalist system is destroyed,

you will be making a mistake if you make agreement with this position a condition, or say it is not worth trying to do anything apart from this. The danger is that in a situation where we haven't had any effective cooperation in the struggle against racialism, it would be disastrous if these ideas you hold become a general condition for collaboration.

Roy: We are saying to our white liberal friends, we have tried to see things your way. If you want to help us we are asking you to try to see it our way. If we are wrong, then, in perhaps five years, some other pundit will have to come up with another answer. But I doubt if we will fail, because the recent Commonwealth Immigrants Act was a great shock for white liberals, and I am sure, Michael, they must realize it by now.

A Runaway World? Discussion of Edmund Leach, Reith Lectures

Margaret Masterman

The Reith lectures are much better than most people think they are. It is true that they rest upon an initial discernment which is then ineffectively and inconsistently followed up—as other critics are saying. But there is an initial discernment; this is not clever writing: it is on the contrary a sincere and humble though awkwardly expressed attempt to go deep.

I did not see this at first, since my first rough and ready impression of Leach's argument was that we should develop a primitive society with an advanced technology. His ideal society seemed to be a society with large kinship groups in which everyone belongs; a society from which the middle-aged were withdrawn and in which the old were exposed; a society in which there is no privacy or individual distinctness (see end of III and end of IV). But it is also a society in which we have wonderful machines, and these are supposed to console us for all the rest. And in interpreting Leach thus, I seemed to have thrown back at me my own ultimate nightmare: for it is indeed just such a primitive society which we shall bring into being if we continue in our present terror-stricken and helpless drift.

Reading Leach a second time, however, I suddenly got hold of a deeper insight behind what he was saying; as in a concrete and static example of pop art one can sometimes suddenly see the abstract dynamic structure behind. The deep thing Leach is trying to ask is : what would it be like if we were gods with godlike discernment? (Note that he does not say *supermen*, he says *gods*). What would we then want to do with our society?

This is his main point at the beginning of the lectures and at the end; the technology only comes in as conveying to us the possibility of exercising our presupposed-as-known god-like powers. What are these god-like powers (remembering always that Leach's god is a Homeric, or alternatively a Hindu-type of god : not the great Unexpressible and Unknowable). Let us reflect on this.

According to view point, such a god can be conceived to be either a projection of our deepest desires or to be some somehow existent, immaterial, and celestial being who inspires our deepest desires. Anyhow, the point is that the desires which the god-like entity embodies are our *deepest* desires; not our shallow ones.

Now, this analysis being granted, what would such a god discern and what would he or she propose to enact? And how would his or her powers and the concrete fruits of these powers be like, or unlike what our present technology actually gives us?

As soon as one says this to oneself the implicit power of Leach's initial insight at once becomes apparent. For what he has discerned—what he has tried to express by using this word “god”—is that society, taken corporately, is precisely wanting its technology to achieve what were anciently thought to be the god-like powers. In other words, Leach is not prophesying, as he appears to be : he is describing.

Consider: we have aeroplanes, which form a first approximation to the divine power of levitating; we have telephones and television which enable us to speak, hear, and see regardless of distance, thus imitating respectively the Hindu deities' clairaudience and clairvoyance; we have, or hope we shall have, computers which can draw superhuman amounts of information from data banks; we are learning to master environments in sea or space in which we can achieve weightlessness; and so-on and so-on. Moreover—and this is potentially one of the great glories of our society—technology can generalize these god-like powers and make them available to everyone, not just to élite deities or advanced Brahmin-born yogis. (For an advanced democracy we are curiously sentimental about ancient yoga, which was the most exclusive and most caste-based mysticism the world has ever seen). Nevertheless, our new divine powers are technologically rudimentary and deficient; no god would stand for the kind of embryo technology we have now. Take planes : planes, though beautiful, are noisy, inflammable, clumsy, poison-spreading, insufficiently stressed for clear air turbulence, too large, too heavy; altogether too much like primitive technological dinosaurs. They take up too much room for take-off and landing, which overcrowds and despoils the countryside; and we cannot ourselves have the fun of driving them. And *mutatis mutandis*, the same criticisms apply to all our other machines. Telephones and self-winding date-line watches work reasonably well it's true, but cars belch; two stroke engines won't start; computer-software gets bugs and the hardware breaks down; yes, special purpose automating devices often work better than you think they will, but . . . and so it goes on. Even for humans, our technology is half-baked : talking to computers in particular is in the stone age; but for gods—why it simply won't do at all. We must insist on a higher quality of god-like effort all round.

And how would we regard our old people, if we—and they—were gods? Would we expose them, as Leach half suggests? Of

course not : why, that is what we do now, with enforced retirement and starvation-level pensions, and for the very old no pensions at all. What would be worthy of deity is not to eliminate old people, but to eliminate old age. Drugs, and chemical rejuvenators as we have them are not enough (our geriatrics is technically beneath contempt). We should be able to teach everybody, rather in the way we now teach swimming and riding a bicycle, to fulfil the avatura yoga ideal—i.e. to delay physical ageing until after spiritual and intellectual maturity has been gained, and then, without deterioration, to allow the body, in a super-trance, to turn itself off. To turn oneself off (instead of what Leach calls “doddering on”) when the body and mind realize that the right time has come—this is what is god-like, and nothing else is. But again Leach is thinking in terms of present inadequate technology, and worrying in an inadequate manner about how you can get the old people out of the way, instead of strengthening them to go off and be happily creative in caves, or elsewhere. He forgets too, that the present-day young *like* the old : it is the damned compact, middle-aged command generation which they can't stand.

Leach, then, as I keep saying, has a deep initial insight; but in working it out, he's less like a god, even a minor Hindu one, than like a rather inefficient technological magician's assistant, always promoting new cosmic magical devices which don't quite work. We, however, if we are seriously to respond to his invitation, must not compound for less than the real achievement of our genuinely deepest desires.

Let us go on: what else could a god do? Healing and regeneration have always been seen as god-like powers. We should become able ourselves to regenerate and re-grow damaged parts of our bodies, instead of putting in spare parts from other people's which may not fit, like a spare part of a Ford Anglia being put into an Austin 40. Granted the god-like potential in man, moral, social, spiritual, intellectual, aesthetic, technological—it's all the same thing really—Leach with his toys hasn't yet got up to ancient Chinese or Indian standards, let alone beyond them. But, given time—and I think in spite of all, we have before us a great deal of time—our technological society does open the possibility of these potentials increasing and also—and this, I repeat, is of crucial importance—of their ultimately being available for everyone. This is why I think Leach's underlying insight and “picture” are cardinal; and why his Reith lectures, though impatient and rough in the detail of their suggestions, are exceedingly well-timed.

Dorothy Emmet

What view of morality underlies, or runs through the Reith Lectures? It is closely allied to a view of the nature of knowledge which also runs through them, and this linking of ways of moral thinking with our ways of trying to know the world, rather than making them quite different kinds of exercise, is something I applaud; however much we may talk about logical distinctions of “ought” and “is”, it remains true that how we think we ought to behave must be affected by what kinds of creatures we think we are, and how we see the situations in which we have to act.

How then do we see them? Leach thinks that our primary, deep-seated tendency is to interpret our environment selectively by distinguishing, classifying, putting labels on bits of it; so that we think of people and things as belonging to groups, separated from each other and from ourselves. The anthropologist-philosopher Claude Lévi-Strauss is in the background; he has done a great deal of work on this propensity of the mind to classify, and particularly to fasten on exclusive binary classifications, not only natural ones such as “male-female”, but more thought-ridden ones, such as “right-wrong”, “right-left”, “we-they”. When you see the world categorized in divisions like this, you then think you know where you belong and where other things belong. And when it comes to knowing what to do, you have a set of expectations of how things (or people) in each set behave, so you can interpret signals from them, and direct your behaviour accordingly (and according to the way people in your set behave). So “An orderly world is a world governed by precedent, nicely organized to cope with facts we already know.” (Lecture I, *Listener*, p. 624.)

But of course the “facts we already know” are facts coming from the past, and these may not answer to the facts of a changing present. Also our groupings and distinctions may be imposing a largely arbitrary grid on the real world. “Cats is dogs, and rabbits is dogs, and parrots is dogs, but that there tortoise is an insect, so you needn’t pay for that”, said the ticket collector when trying to decide what tickets he should sell to the old lady travelling with her pets.

When we apply this attitude of mind to morality, we see people divided into “we-they”, and into mutually exclusive groupings. And each particular group has built up a set of established expectations about how people like “us”, or like “them” should behave, and when

these are fulfilled, we feel all is well, and people are doing the right thing, and if not, not.

Leach is saying there are two things the matter with this attitude of mind. First, as a view of knowledge. Our scientific knowledge of the real world, and not just the world as it appears to ordinary "common sense", has developed through seeing how things are inter-connected, not by putting names on things and classifying them. (Taxonomy may be a help in botany and biology, but it is not a fundamental science, and is only a help in so far as the principles by which you classify plants or animals give a clue to important structural resemblances, and do not just mention single qualities such as colours.) So scientifically we have to learn to think in terms of interconnections; and indeed the world is being seen in terms of systems within systems, interrelated in an ongoing process and always on the edge of what is still unknown. If we apply this way of looking at things in morality, we shall have to learn to think in terms of interconnections between people—and ourselves as part of the interconnected web in a still developing process—rather than in terms of distinct groups, and of "us" and "them" in a fixed world.

I think Leach is saying something important in calling for this switch of attitude of mind in morality as well as in other kinds of understanding. But he fails to give us much lead into what sort of social morality this would produce, beyond recommending certain qualities such as flexibility, readiness for change, interest in co-operation rather than competition. This gap in the Lectures is due, I think, to his not going far enough into the question of whether there hasn't got to be a certain amount of order which people can take for granted, so that they know where they are, if they are to have energy and creativeness for innovation, and if they are going to be able to co-operate. Leach faces us with an extreme stereotypy in social mores answering to the expectations of the old, the kind of world, the kind of institutions, the kind of education, the old were brought up with and understand: and these he says, are now right out of gear with the world technology is producing and the world as the young see it and want to see it. So on the one side, you have this stereotypy, as an obstacle to the creative innovation which would take account of the realities of changing situations. And on the other hand, he recommends an outlook which is prepared to embrace anarchy and live in "continuous revolution". (Lecture VI, *Listener*, p. 808.) There is a desperate courage here; but perpetual revolutions are, to say the least, very exhausting in mental and nervous energies, and most revolutions have a way of settling down into new stereotypies (as for instance the revolutionary art of the

Soviet Union). Has Leach here succumbed to just the kind of propensity to exclusive binary distinctions which he sees as a source of our troubles—so we have *either* stereotypy, *or*, “continuous revolution”? Is it possible to think of how a social morality can have some stability about it, and yet also encourage people to be flexible and imaginative enough to face new situations, and not always to be trying, as was said of the British General Staff, to win the last war (or the last but one)?

Perhaps there may be a way into this, through looking at the respects in which even an established social morality isn't quite as much of a stereotypy as Leach suggests, and then we could ask whether these points at which a certain amount of creativeness bursts out already couldn't be emphasized, so that our powers of *moral judgment* (as distinct from applying text-bookish rules) could get strengthened.

One point is the character of social roles themselves. Leach says we classify social relations in roles in a binary form—parent-child, teacher-pupil, etc., and there are supposed to be fixed expectations about the proper way to behave on each side. But in fact, as sociologists like Robert Merton are always telling us, we have to act not only in roles in a binary relation (doctor to patient: patient to doctor), but in *role-sets*, i.e. systems of multiple relations, where the doctor is also connected with his colleagues and with the patient's family, and in hospital with the nurses, and perhaps medical students, and the B.M.A. and so on, and so on. And the mutual expectations of the different parts of this set up may not always harmonize smoothly. Moreover, the doctor is also in another complex of relations in the “role-set” of his wife and family, who may be making conflicting demands on him, and no doubt in others as well. So, poor chap, he has got to use his judgment at a number of points in deciding priorities and in taking risks; he can't just go by a set of rules. (In other words, he has to learn to think in terms of a lot of interconnected relations, not just binary ones, and this is a way of thinking in which sociology is some help to us.)

Also people can manipulate the conventions and get away, if not with murder, at any rate with a good deal of unorthodoxy under a show of conformity. They can do this for good reasons as well as disreputable ones. Melville Dalton, in *Men who Manage*, recommends that those who mistake surface conformity with total conformity should study the ingenuity that actually goes on and “the ethics of protective colouration among thinking animals”. Of course, this can produce a defensive, double-minded attitude, and be very different from the single-minded and creative innovation

which Leach sees we are needing now. But at least it means that in actual operation people exercise their wits and their judgment in adapting the social mores more than may officially appear. In any institution, there has to be a certain amount of “licensed deviancy” if it is to work at all, and also in emergencies people have to be ready to break rules and take over roles from each other.

Leach as an anthropologist surely knows very well that there is this play—and much more—for personal judgment and initiative within a social morality. Indeed, in Lecture IV (*Listener*, p. 750) he says “as long as we think we can recognize what the pattern is meant to be most of us are quite willing to tolerate even quite wildly unorthodox behaviour in other people”. But he plays down this side of it in the Lectures, presumably because he thinks we are at a point where we need much more sweeping radical changes in our social morality than are produced by these exercises of eccentricity, judgment and initiative within the existing set up. Non-conformity, he is telling us, will need to be explicit, not hidden by protective colouration. But won’t the changes need the temper of mind of people who have already learnt to be flexible within a framework of order; who both see the need for order, and also can judge when to sit loose to it?

Yes; we must get over fear of the unknown (which he says is likely to go with non-participation) and we must encourage curiosity and imaginativeness. But people can’t innovate all along the line all the time; if they try, they are likely before long to relapse into another perhaps even more rigorous conformity (as dictatorships tend to appear in conditions of anarchy). We have indeed to get rid of obsessive concern when everything doesn’t get done according to what are supposed to be the correct rules. Leach says that when someone reacts in a totally unexpected way our reaction is one of fear and disapproval and we call it “morally evil” (Lecture IV, *Listener*, p. 751). I don’t think this is always true. Sometimes the unexpected response—a generous remark instead of a cynical one, a joke instead of heavy comment—may re-structure a whole situation, and we greet it with delighted recognition that it was entirely right, not dubbing it “wrong” because it was unexpected. People with religious discernment can sometimes produce the new, unexpected alternative; certainly other people very often then react with fear, and get shocked and angry, but not always—or not always in the long run.

Leach has shown us what creatures of conformity we tend to become; but he has also said that the human species, like the rats, have curiosity and adaptability. In scientific knowledge, as he says,

we are coming to learn to think in terms of interrelations. So perhaps we need not be faced with stereotypy or anarchism as the only alternatives—though they are indeed opposing ways in which realistically serviceable kinds of order can go wrong. But I wish he had said more about how you go beyond the “thesis” and “antithesis” in this pair of opposites.

Richard Saumarez Smith

I am not sure which part of me should rise to Leach's magnificent bugle-call, the underdog striving for recognition in competitive exams, the megalomaniac anthropologist settling new world-norms, the revolutionary, the rational self or the irrational, the pragmatist or idealist. Fortunately, all these are fused in me and I am young. So I shall answer for the youth.

I am in great danger of misrepresenting my contemporaries. Typifications are always easier from without. Nevertheless I regard the hippies, flower-power and drugs as characteristic of the youth today—just as, thirty to forty years ago, it was political ideology that had the youth up in arms. Whether or not this gap is reflected in Leach's ideas of the young is an open question. As is the question of whether we're not all talking about an intellectual élite, and intellectual concepts of tolerance. I am afraid that we are, although, if we are going to make use of knowledge, it is difficult to see how the intellectuals are not going to be in power, whatever the revolution.

What, then, I think does categorize the youth is the quest for Truth. Some people might rather say the frantic search for identity, to which I should add the word "inner". It is a craving for experience, for insight, for peace and for tolerance. We want to achieve the infinite in one fell swoop, without having to go through an infinite number of meaningless to-ings and fro-ings between megadeaths and Oxfam, Vietnam and death on the roads. This is why the conflict between old and young is so strong—only I don't think it is the old so much as the middle-aged, those horrible in-betweens who are neither searching for future experiences nor living on past ones, but who are caught in the scrabbling, noisy competition. The worst thing about them is their unthinking outward conformity. They have a duty to conform. The youth have a duty to their selves. The middle-aged are always hitting us below the belt saying how selfish we all are—and not realizing anything about themselves, in particular not realizing that their idea of selflessness coincides with that of conformity. Help others in a conventional way, where all the responsibility is shifted away from you. Conformity is the complete opposite to tolerance.

As for the old, those keepers of the much sought-after experiences, the young like them. The trouble is that, at the moment, what with commuting and what not, by the time they *are* old, they are

totally flaked out. Not at all frolicsome and not very wise—fear of fear and frenzy—they take retirement as a blessed relief or as the end of everything and *do* just dodder on to death. It's pitiful rather than horrible. As for me, my ambition is (a) to have kids, and (b) to retire from the fray as soon as possible—only retreat will, I hope, be glorious and victorious.

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On the political level, the youth are reacting against those nameless, pathological, bureaucrats, the middle-class. Here again, Leach is almost right but not quite. It is not class generally that we object to, it's those horrible middle-men. Give me feudalism or caste any day rather than this competitive meritocratic bureaucracy. I do not want to compete (unless of course I win); I want peace. If Truth is the higher synthesis of conflicting oppositions, I can see nothing angelic about either the middle-aged or the middle-class. They are trying to fly, but are so desperately clipping each others' wings, that they cannot get off the ground. They are the complete *non-gods*.

On this level, the synthesis of different and diverging intellectual disciplines becomes important. At the end of the last century this was hot academic debate among anthropologists, whether the division of intellectual labour, "this return to a new Alexandrianism," would "lead once again to the ruin of all science" (Durkheim in the *Division of Labour* quoting Schaeffle). Comte reckoned the Government should provide the synthesis; Durkheim thought that the division would of itself create its own synthesis. Into this breach steps Leach.

But, as I've said before, I think he is confusing the spiritual with the political, perhaps owing to difference in generations. What we should all aim for—not just the youth—is a synthesis of both political and spiritual, a coherent system of values which gives hope for scientist and introvert alike. Patently we've got nothing like it at the moment, we're a mass of isolated and unconnected bodies. The Government is always one step behind, churning out law upon law trying to keep up with the rapidly-changing, *external* political environment. The Church, too, is jumping on the band-waggon and not offering anything for the unchanging, *internal*, spiritual environment.

Both Leach's suggestions fall between the stools. Perpetual revolution might be O.K. for social change, but it would be perpetually dispensing with the means to the spiritual end, namely quiescence. Anarchy on the other hand, might be O.K. for the soul—there would be so many Atmans all becoming Brahman that

everybody would be “conscious of one experience” and there’d be total interconnectedness—but not for the body. After all, politically anarchy is surely the very opposite of interconnectedness. The alternative is just one, big, all-shattering revolution in which language goes for six and everybody is left in a world-wide kibbutz with flowers in their mouths and “love” on their lapels. Presumably the kibbutz would be run by that hippy-patriarch (intellectual élite and all the other things I said at the beginning) lolling about in his pad in King’s (acknowledgment to Malcolm Muggeridge). As we all know, hippies are leeches on society.

As we also all thought we knew, alas, the hippies got it all wrong and had flowers in their lapels and love on their lips—and everybody thought they meant sex. In fact, hippies and leeches are the only ones with the right idea—Tolerance. It is society that needs to change.

We need a central pole, a maypole perhaps, round which we can all frolic. Knowledge won’t do in view of its finiteness and inevitable inconsistencies. Morality won’t do either, because it immediately separates the moral from the immoral—and would one not get competition for the dispensership of the new divine morality? I suppose priests do not compete for priesthoods, but they surely compete for bishoprics. Church and State do not appear to go very well together. One can’t get to heaven on a green-line bus.

It is difficult to see how such a change in attitudes will be effected without some action on the part of the (proper) Divine—preferably someone who can direct us to take care of our selves. But I do not think that the society would thereby take care of itself. We need to harness knowledge in order to behave like gods, so alas, we need competition, and so we can’t have a caste-like social structure where the only competition arises *after* death when everybody’s striving to be reborn higher up the worldly ladder. But no! frightening implications! We look at the past and see the “synthesis” in a Hindu caste-system, where the Brahmins will be substituted by the intellectual élite and the latter will preserve their endogamy by “scientific” rather than natural means—by artificial insemination to produce geniuses. Any accidental genius would be socially recognized and would be treated as a guru. Such implications might seem frightening at first sight. But perhaps this is what Leach meant when he said we needed a total change in moral ideas.

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The trouble is that prophets today have to go through so much red tape before their message is revealed. The power of the written

word—let alone that of the press—has overcome man, that spontaneous creator of the spoken word. And I'm not sure if the prophet would get past the psychiatric ward.

On a more practical level, however, perhaps the first attempt at a solution is compulsory retirement at the age of 55. The old would then have a chance to coordinate their knowledge, rational and spiritual, and we, the young, would learn quiescence and toleration from the old, and specialist techniques and competition from the middle-aged. The actual governing of the society would be in the hands of these young old, who would be continually handing over control to the old young. This would not be perpetual revolution, merely a balanced process of socialization with an element of hope in it. The middle period of our lives would no doubt be utterly terrible—but by the time we reached that stage, we'd accept it as dharma—and anyway it would increase the wisdom of old age.

A more practical suggestion still, and one which should be done here and now, is to replace commuters by computers, replace the bureaucratic machinery by *proper* machinery.

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I wonder what Leach's non-traditional type of policy really was; the trouble is he speaks the language of the old, so how can the young possibly learn? Besides, revolution-time is not yet ripe. We are going to suffer a great deal more loneliness before the need for connectedness is universally felt. Perhaps revolution-time will then be evolution-time and we'll all be sitting up trees waiting for the Divine Revelation. I'm afraid Leach by that time will be a living machine (with a dead consciousness) and I shall at least be middle-aged.

P.S. On writing the bits below the last stars, I had divine revelation (without capital letters). I now see that I mislaid a crucial point in Leach's argument, but I'm not going to rewrite mine, because much of it still holds good. Where I thought Leach showed confusion was over perpetual revolution and anarchy. His point is:

1. Revolution = Evolution.
2. We are gods—we can artificially create human geniuses, etc. and we should be frolicking.
3. We must not look into the past because that would be clipping our godly wings and might mean : no flying, no frolicking. We want *insight* rather than *past experiences*. This can only be settled by a scientific, élite forum (in a committee-room?), i.e. by the people who are in the know. Would this be what

Durkheim had in mind by “the spontaneous consensus of parts”? Anyway, the old, unless they can fuse their experiences with insight—e.g. in sannyasin—are the worst off, because settled in stereotypy.

4. Hence the need to educate for creativity.

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Leach’s non-traditional policy was certainly *not* to think in terms of orthodox ideas of anarchy and perpetual revolution. *Nevertheless*, the question still remains: where does the self fit into this scheme? It is not enough to say “self-consciousness is awareness of relations”—a tautological kind of statement. Are these relations the real reality, and by insight would we only mean focusing on the relations; is an individual nothing more than the intersection of relation? “Patterns of relations are the only ‘reality’ with which we can have any real connection”. Am I, in fact, trying to see deep spiritual insight in mere scientific description? I feel as if I’m sitting on the top of Mont Blanc waiting for Doomsday and clamouring for revelations from the “prophet” who led me up there.

Reply

Edmund Leach

My starting point is as Margaret says: The ancients absolved themselves from responsibility by putting the blame on miraculous beings—the gods. But what seemed miraculous to them has become commonplace to us: we look in on events taking place on the other side of the world, we produce magical seeds which yield crops ten times greater than before, we even restore the dead to life by Frankenstein-like surgical operations. These are precisely the *kind* of feats which were attributed to the gods of old, and, in that sense, we have already “become like gods”. It is true that this has not relieved us of our anxieties, but it should surely be a source of optimism? Whatever we now imagine to be impossible will in due time fall under our control; new impossibilities will then appear over the horizon, but again we should not despair. Yet the problem of theodicy remains; indeed it becomes much more acute. In times past, the gods were made to carry responsibility for all human misfortune; it was in rather sophisticated religious systems that the gods’ own ethical evaluations were seen to represent an intellectual problem: if God is omniscient, omnipotent and wholly benevolent, why should His human protégés have to suffer misfortune at all? But now that we ourselves have become gods (in the more rudimentary sense) we begin to see that, even if we lack the capital “G”, we are still called upon to take moral decisions on a God-like rather than a human scale.

The most obvious of all such decisions which now rest with *us* rather than with some external metaphysical power is the issue of the density of human population. Very recent medical advances in the techniques of preserving human life have not yet been applied on a scale to affect the actuarial expectations of substantial populations but the potentiality is clearly there. Even “in nature” there seem to be some human populations where the gene pool is such that an occasional individual survives to be 120 years old or more, and it seems quite obvious that if the latest techniques were to be applied on a massive scale the general expectation of life could rise quite dramatically. But who is to decide? The moral evaluations which we have inherited from the past are an inadequate guide in this new technological situation. The old principle that “it is virtuous to save life” was dependent on the background context that however hard you tried your virtuous endeavour was not likely to be

particularly successful, your good works were subject to *human* limitations. But now that you have become a *god* it's not so easy. What will happen to society if you apply this particular principle of virtue in too reckless a manner? This is not a remote puzzle for a hypothetical future, it is with us now; or at any rate just around the corner. In my comments on this topic in my Reith Lectures I put the emphasis on the sadness of a decrepit old age unnecessarily preserved, and Margaret comes back at me with the query: "But why should gods grow old at all?". But that is just the trouble. The ancients had some insight into the problems of god-like domesticity; their gods and goddesses seldom engaged in procreation! "We should be able ourselves to regenerate and re-grow damaged parts of our bodies. . . .". That is logical enough: but what sort of prospect shall we be offering to the young if they look around them and observe that their elders, far from being decrepit at 70 are still hale and hearty at 110! From some points of view the second alternative might seem even worse.

I have no personal answer either for this particular problem or for the others which I mentioned in the course of my lectures but the point that I was trying to make is that because of the pace of technological change and the extraordinary possibilities which scientific achievement now lays before us we are faced with the collective responsibility of making decisions which will affect quite radically the basic patterns of human society as such, and it is as well that we should all talk about these things and think about them and perhaps adjust our moral presuppositions so that we are not taken wholly unawares by the rush of history.

* * *

Dorothy, who has been hob-nobbing with social anthropologists for many years, recognizes more clearly than my other critics that the central paradox with which I was trying to grapple has a long sociological history. Any structural-functionalist analysis of "a society" conducted in a style derivative from Durkheim and/or Malinowski contains certain built-in presuppositions about the desirability of social equilibrium. In the Durkheimian scheme, moral consensus is "normal", lack of consensus is a symptom of social pathology. Sociologists and social anthropologists are perfectly well aware that all actual societies are subject to historical change and that the social system which any particular sociologist observes at any particular point of time is a system which is in process of evolving into something else. But social theory is not well adapted to this appreciation of the historical facts. Accounts

of the "process of socialization" (i.e. education) ordinarily take it for granted that the young, who are being socialized, are being trained to fit roles which their elders already fill. The normal developmental cycle of society is one in which children turn into adolescents and adolescents into adults in perpetual succession and social theory cannot take account of the fact that, in a situation of really rapid technological change in which the economic infrastructure is changing quite radically every fifteen years or so, power tends to rest with men over 50 who were originally socialized to meet conditions which no longer exist and who have no real means of communication with the present generation of adolescents who are being socialized to meet equally evanescent cultural circumstances.

The exaggerated polarization of the old and the young which now exists in most modern industrial states, as well as the other kinds of social polarization which I discussed, are symptoms of this basic lack of fit between contemporary technological circumstance and the framework of intellectual categories and moral assumptions in terms of which the older members of the community were originally "socialized". To many quite ordinary people, both elderly and middle aged, the contrast between the theoretical order and the facts on the ground has now become so great that the whole system seems to be dissolving into chaos. Their reaction is often a resort to slogans. They keep on reaffirming their belief in the need for order, meaning by that the pattern of social relations which they were taught to consider normal when they themselves were children and adolescents.

Dorothy rebukes me for suggesting that this polarity between chaos and stereotypy represents the only alternative possible, and in any case she doubts the merit of preferring to face the chaos of reality rather than trying to operate with the artificial regularities of an imaginary moral order. I think Dorothy has been caught out here by the ambiguity of my phrase "continuous revolution" which Richard correctly diagnoses as being meant to stand as a synonym for "rapid evolution". Revolution, ordinarily understood, is explosive, sudden, and violent. Revolutionary social theory—e.g. that of the Marxists—postulates that society progresses from one equilibrium state to another equilibrium state through the median point of a short violent revolution. It is a doctrine which stands opposed, for example, to Fabian styles of socialist thought which presuppose that it is possible to alter the basic structure of society by a gradual process of whittling away at particular injustices. There is a sense of course in which Fabian doctrines are

“evolutionist”, and I myself am at heart a Fabian, at least in the sense that violence is something which I would prefer to avoid. On the other hand I hold that in this country the “gradualist” evolution of the socialist state over the past 70 years has been much too slow. It is too slow in relation to the dramatic acceleration of technological change and, unless it is speeded up, the outcome must be a revolutionary explosion of the violent kind. By “continuous revolution” I mean an enormously accelerated and risk-taking Fabian socialism. This does not call for any innovations in the field of moral education but it does call for immensely greater vigour and courage among those who assume roles of leadership on the political Left. Since the combination of vigour and courage and radical thinking is far more frequently encountered in men under 45 than in men over 60 I attach very great importance to the development of a social expectation that the locus of power should be among the middle aged rather than the elderly.

Richard’s questions are of course the really difficult ones. Where does the self come in? Can we only evade the paranoia which develops out of the opposition “myself” *against* “the other” by voluntarily submerging our individuality in some kind of evolving Durkheimian collective conscience? Clearly this is a multi-sided question. Firstly what is politically desirable? Does a system of social indoctrination in which the role of the individual is minimized as against the significance of the “general will”—e.g. education in Maoist China—produce a “better” society than one like our own which puts emphasis on individuality and encourages competition?

Secondly there is the problem of psycho-physical reality. Where is the self located? What am I? Spare part surgery has given a new twist to this perennial question. It is, I gather, by no means beyond the resources of contemporary surgery—at least as a theoretical proposition—that a human head might be kept “alive” and “conscious” while attached to a “body” which consisted entirely of mechanical apparatus. This style of science fills me with such personal horror that I prefer to seek my personal identity in a metaphysical conception—a pattern of relationships—rather than a physical conception—a pattern of electro-chemical reactions among brain cells. But, at this point, I suppose we have moved outside the sphere of logical positivist verifiability into a twilight zone of mystical sociology which is only marginally distinguishable from Emile Durkheim’s “group mind”.

I am appalled that Richard should look upon me as a prophet who has let the side down by not pointing the road to the Kingdom of God, but I am reminded that even the most deplorable characters

can be cast in the role of Lost Leader by men of admirable good will. Wordsworth and Goethe both looked upon Napoleon in this light! Alasdair MacIntyre was surely right in suggesting that the Reith Lectures have become a sort of secular sermon. But the function of sermons is to get people to talk among themselves, they should not be confused with bugle calls which summon the disciplined to heroic suicide.

“It’s not blood we fear but boredom”*

Alec Dickson

I want to begin with no less than five quotations drawn from different situations in different parts of the world. First, on a summer evening in New Delhi a few years ago, the speaker was Mrs. Indira Ghandi, addressing Indian students on the eve of India’s celebration of National Independence. Suddenly, in the middle of an impassioned speech, Mrs. Ghandi shot out the remark—“Social service for young people in the West may be a luxury, for our young people here in Asia it’s a necessity.” “Social service for young people in the West may be a luxury” : is this true or false?

Next, three years ago, a headmaster at a conference dealing with service by young people quoted a remark made to him by a boy in his school—“I can’t help noticing, sir, that in this school if a thing is considered really important it is compulsory. It is only what is marginal, nice but not absolutely necessary, that is marked voluntary”.

Then an eighteen-year-old boy, after nine months of working in a school for maladjusted children as a valued member of staff. Something had angered him in observations about “stop-gap” work undertaken in hospitals and elsewhere by young volunteers. He wrote to me : “Could somebody tell me if there is a certain category of work which is ‘voluntary work’, to be done only by voluntary workers? If so, what does it entail? Personally, I do not believe that such a form exists. Surely the fact that somebody is needed is the main criterion for a volunteer to work. Why is gap filling such an undesirable form of work? It is the manner in which we work that matters, not the type of work we do—so long as it is worthwhile.”

Fourth, another eighteen-year-old who, presented with very many alternative forms of service, chose to go to a Borstal, that is to say, an institution for young prisoners, to work there sharing exactly their food, their clothes, their discipline—to be one with them. In the fifth week I got a letter and out of the page leapt this sentence : “If you set too good an example here, sir, you are crucified”.

Lastly, another young volunteer in workman’s overalls whom we

* Originally given as a lecture in June, 1967 at at Study Group organised by the National Council of Social Service, as part of the United Nations European Social Development Programme.

took from an apprentice workshop in Glasgow to the casualty ward of a great hospital in London, where he alternated in applying his technical skill in the occupational therapy department and helping in the casualty department. I remember so vividly asking him at the end of two months, "Well Andrew, what has been the most alarming of your experiences?" He replied with passion: "It's not blood we fear but boredom."

Let us step back for a moment and try and look in perspective at these five apparently so contrasted incidents. Of course one knows exactly what Mrs. Ghandi meant. Famine in Bihar and tens of thousands sleeping in the gutter at night in Calcutta. When one arrives at Cambridge Station one does not see a blind beggar thrusting a begging bowl or a tin cup for one's largesse. Under such circumstances one can understand what she meant in saying that social service for young people in the West might seem a luxury. Could it be, however, that she was wrong—and that it is precisely because physical suffering is no longer apparant to the naked eye in our western society that it is all the more important that we should be exposing our young people to situations of human need?

Perhaps two things emerge from the quotation from the boy's letter in the institution for young offenders—"If you set too good an example here you're crucified". First, the nature of the challenge. We have moved in this instance a long way from the concept that the role of the young is perhaps to drink cups of tea with elderly ladies. Community service, social service, voluntary service can be more challenging than anything else. I find it very necessary in Britain today to declare this as often and as loudly as possible. In a discussion with interpreters before this paper I asked what phrase they were using for the odious English colloquism "dogooders", and discovered that it was a peculiar British idiom perhaps denoting a peculiar British disease. This feeling that you are quaint; that you are odd; that you are almost in need of psychiatric treatment yourself if you express a desire to help other people, is a poisonous doctrine which is doing more to discourage service, certainly by the young, than any government regulation which they may find inhibiting the acceptance of their service. This is worth saying if only because of an article published in "New Society" by one of the senior psychiatric consultants of the Maudsley Mental Hospital describing "the biological need to help". This emphasized that we are fulfilling something absolutely natural and fundamental to our growth as human beings in wanting to help other people.

But certainly with the young and especially with the male adolescent, I think it is necessary to represent the whole scope of

community service as near as possible to William James' famous phrase "the moral equivalent of war". I think this is significant also because of the particular role that the young volunteer chose to fill. He could have gone—we offered to send him—to one of the very many other institutions for juvenile delinquents where he could have played a valuable and necessary role as an auxiliary member of staff with the status, protection, security and comfort which that would have denoted. In fact he chose the much harder role of sharing life with the delinquents—what I would call the lay equivalent of the worker-priest role. It is those who have themselves suffered, who are now making really significant contributions in the field of social service and social help (as in Alcoholics Anonymous, Recidivists Anonymous, Gamblers Anonymous—the modern manifestation of the biblical phenomenon that the blind may in fact be best equipped to lead the blind); and, in this kind of situation, perhaps the young volunteer may have something very real to give.

There is a third consequence from that boy's quotation, and from the other one, "it's not blood we fear but boredom". I suggest with all possible emphasis that we are in danger of becoming too protective of the young, particularly in the roles that we are prepared to grant to them in our work. In spite of all the hideous dangers which are so often pointed out to me almost daily, of putting young volunteers into this situation or that situation, the consequences are not likely to be as great as those that will ensue from our *not* making use of young people. The feeling of being not needed in modern society except as consumers, may in fact be the greatest growing social problem of all those confronting us in the second half of the twentieth century—and it is not exclusive to the young. Therefore, whilst readily acknowledging all the hazards that may accrue from our placing young people in situations of stress and strain where hitherto we have considered that very great professional skill, training and maturity were needed, the greater danger still may lie in giving tens of thousands of young people the feeling that they have no share in this process at all.

Now, what is new, what is exciting in this field? I think the sheer numerical factor. Perhaps we have been thinking hitherto in terms of using volunteers by the dozen or hundred, when the real problem is how to be using tens or even hundreds of thousands of young people. This is going to mean totally new thinking on the part of the professional social workers. In my own work I have seen over the last four years, within the schools, a very significant swing of the pendulum away from social service undertaken by a small elite of the most intelligent boys and girls. Sometimes this is in

mute, sometimes in vocal, protest or reaction against a semi-voluntary, half-compulsory participation in military training which is a curious nineteenth-century left-over of independent school education in Britain. Occasionally it may be a reaction against an excessive overdose of compulsory games, but I think there is also present a very real sense of developing social conscience. The forms it has taken are perhaps naive. Why should it not be? For instance, at a school in the Midlands the boys leave home for school fifteen minutes earlier than strictly necessary—(and of course some parents may even see some sacrificial gesture in that!)—each with a razor in his pocket, each to shave one old man in the geriatric ward of a general hospital before proceeding to school. The girls from the school opposite return home half an hour late, three afternoons in the week, because they have stopped at a parallel institution for old ladies to give them a “blue rinse” or a hair-do.

At another school, just one but it might be typical of so many, a feeling of incompleteness and insufficiency seized hold of a small group after the school play. This as usual had been produced for two nights only, once for the school and once for the parents, staff, governors and local dignitaries. This group of young people determined that somehow or other their play should give pleasure outside the accepted conventional surroundings. They approached a nearby mental hospital where they had the good fortune to encounter a shrewd perceptive medical superintendent who at once designated them to a ward containing patients able to grasp at least the gist of their play. At the last moment the teacher with the group decided to include two small boys aged twelve, still in shorts, whose unbroken voices could do justice to the feminine roles. I recall him telling me that as they entered the ward that night he was conscious of a bare knee pressing rather tightly into the lower calf of each leg—the two small boys manifestly alarmed lest the whole ward go berserk on their entry. In fact the play took place in dead silence, all eyes concentrated on these two small boys. At the end an elderly lady came up and said “I, and most of us in this ward, have been here ten years—tonight we have set eyes on a child for the first time.” Every youngster in that group went home that night in the total conviction that this little gesture of wondering where their play could give pleasure outside the normal, conventional setting and this last minute inclusion of two small boys, had somehow achieved more curative good in the course of one single evening than three months of the most modern electrical therapeutic treatment.

In yet another school they have invested in what you might take

to be a rather curious Edwardian mechanical gadget, peculiar, I believe, to Britain—the tandem bicycle. What has a tandem bicycle got to do with community service? It depends, as always, who is on the back seat. On the back seat in this instance is a blind boy or girl, from some nearby institution, accustomed to being told “Oh yes, we can train you to be a telephonist and, of course, if you are very bright and have passed all your examinations you might even one day be an interpreter or a translator. But you can never never, in the nature of things, have the thrill of feeling the breeze on your face as your bicycle gathers speed downhill”. Now suddenly this is their experience! And for the sighted boy or girl there is the challenge of trying to make understandable the passing scenery on a day in the English countryside to one who has no eyes—a shared adventure.

The pattern three to four years ago was of an intellectual elite, sensitive and with a social conscience. Now the pendulum is swinging, and in our educational parlance it would be called the “C” and “D” streams in our secondary modern schools, the near-illiterate, the academic failures who are involved. Now, teachers are saying, under the inspiration of Sir John Newsom’s famous report of four or five years ago, that it is a vital part of the education of these children to be brought face to face with situations of human need, in such a way that they learn that they, individually, can contribute to their solution, before we throw them on to the labour market at fifteen or sixteen years of age. One headmaster has called this ‘condoned truancy,’ this letting of the children out of class and plunging them into the community as an integral part of their education. Now it will be apparent why I say that we must be prepared to accept the service not of dozens or hundreds but of tens of thousands of these young people.

Obviously, our ethics may be offended here. If it is an integral part of the children’s schooling, of their curriculum, what happens to the word voluntary? A fifteen year old Lancashire boy on being asked to mend an old lady’s iron, responded “Don’t give me that stuff about ‘Service’, just give me a job to do”. Are we only able to give them the sociology and philosophy of service—or have we got the actual jobs to give them to do? And how are the possibilities? Are they no less exciting than those that can be undertaken by the sensitive senior pupils who in a few months time may be on their way to our universities? I think of one girls’ school, a secondary modern school where the girls leave school at fifteen, in Walkden, near Manchester, where under a gifted, perceptive science mistress they have devised aids—alarm clocks, in fact, for the

deaf. They went to the hairdressers in their town and begged or borrowed old out-of-date hair driers. They linked them in electrical combination with alarm clocks—and now elderly folk who are deaf or hard of hearing in the town of Walkden can go to bed secure in the knowledge that the following morning, at the prescribed hour, without outside aid, they will be woken by a blast of warm air on their faces! The same class have gone one better; they have now perfected a device which will sound an alarm when a baby is snatched from a perambulator. The mistress said to me, “I know it may be only occasionally that a child is stolen from a perambulator, but the fear that it could be *their* child is a very real, very live one in the minds of most young mothers.”

To take another instance, there is the feeling amongst many of those in charge of our training of young people—both boys and girls—for the police (whom we in England call police cadets), that they too should share in this kind of experience. One Chief Constable said “We are looking for the social equivalent of ‘Outward Bound’”—the social equivalent of adventure training courses. Is it not vital that young policemen should have some experience which makes them more sensitive to the social consequences of their work?

It is even more exciting that a corresponding mood is now going through the minds of those in charge of the training of our young offenders. They are coming to realise that perhaps their young people need, as an added dimension, to feel that they too have something to give and that they too are needed. When I first telephoned the director of one of these institutions, the conversation went like this: “Ah, Mr Dickson, you have telephoned to offer me one of your splendid young men, have you?” “No.” “Then why are you telephoning?” “To ask if you can give me one of your splendid young offenders!” “Just let me have two hours!” was the reply. He rang later and I recall so well the voice coming through to us—“I’ve got the permission of the Chairman of our Children’s Authority. I’ve got the approval of the Home Office, I’ve got the boy and I’m bringing him this afternoon!” What we did for the boy, and what he did for the disabled, was small compared with what we did for the morale of that headmaster and his staff by the knowledge that his young people might play a significant role in the helping of others. Humour, I am glad to say, cannot help but break through even in the most serious and grim situations, and I well recall the first letter from the first boy from such an institution. (One opens the first letter from any volunteer with a certain amount of trepidation.) “It’s ‘smashing’ here, sir; they’re lovely,

these old folk. And I think they like me. At least two of the old ladies have asked if I would visit them afterwards, but I've had to say 'I'm awfully sorry—you see I'm Government Property'!"

Perhaps even more eloquent was the case of the last boy assigned to us from this background. When I asked the staff member in his presence "How did the choice fall on Michael?" "Well, we got your message, the headmaster announced it at Morning Assembly and many hands went up." "I suppose Michael's hand amongst them?" "No" said Michael. "Why not?" I asked. "I never dreamt I would be chosen" was the reply. When people say that one is offending against the ethics of the voluntary principle by taking young people who have not volunteered I recall that boy's remark—"I never dreamt I would be chosen".

Perhaps the biggest opportunity of all is for our young people at work in industry. Last year I had a telephone call from the most famous school for the blind in Britain. "We have a grant from the Nuffield Foundation to develop teaching equipment for the teaching of science and mathematics throughout the blind schools of Britain—and we have a wonderful member of staff. He's a genius for this kind of practical work" they said. "Then why are you telephoning me?" "Well, we're just discovering that he cannot be both teaching and developing simultaneously, so would you give us a volunteer with manual skill?" So we telephoned the largest steel factory in Britain and in a few days, Richard, an apprentice, was on his way. Like the boy in Borstal he asked to be treated to all intents as though he were a blind boy—sharing life in the dormitory, eating, working, playing with them in order to get the "feel" of what technically they could and could not do. One consequence has been that a sizeable proportion of the new magnificent training workshop opened last April by Sir John Cockcroft of Cambridge, has been turned over to the production of an electronic eye for the blind, so that hundreds of their young apprentices in training have the feeling that they are not just undergoing a training process but they are actual participants in a revolutionary contribution to the help of the sightless all over Britain. This could be emulated, surely, in every factory in the country.

Add these components together, in our schools, in our institutions for young offenders, our young people in the police, our young people at work, and I think you will realise that the potential number of young volunteers stretches into hundreds of thousands. What is significant is that most are doing this as an intrinsic part of their training. We have to move away from our picture of the small group of dedicated young people who are available to help

in their spare time, on Wednesday evenings and perhaps on a Saturday afternoon. Now thousands are available—on call at 9 a.m. on a Monday morning. No wonder that a new profession has arisen—professional, skilled directors of young volunteers.

Surely what emerges is the need for a radical re-structuring of the social services in order that we may take advantage of these young people. Can we analyse in depth the way they can be used? Here I return to the angry eighteen-year-old who so objected to the phase “stop-gap.” Let us face it, is it only in England or is it not also in Western Germany, in Holland, indeed in the whole of Western Europe, that our general hospitals are stretched to breaking point? With our hospitals for sub-normals the staff shortage is even worse. (And should not all of us who believe in voluntary work salute the tens of thousands of high-grade sub-normal patients, some of them only adolescents, who may not be conscious that they are volunteers; who might be quite unaware of the sociology and ethics of social service, but who in fact are helping to nurse the more afflicted sub-normals in our hospitals? Are they not the greatest army of volunteers in the field at this moment, even if the field is the hospital ward which they themselves never leave? They may be the stop-gaps, but I prefer to call them front line relief.)

A theory of mine is that the quickest way to go a very long distance organisationally, is to arrange a relay race. Could we not apply the same to our social services? However well we organise the social services in a Welfare State there are going to be some tasks which are not very agreeable to perform. When years ago I worked in rural welfare in Iraq and saw in the tragically squalid poverty-stricken villages the teachers and other civil servants who hated every moment of their Babylonian exile, and who longed to be back in Baghdad, I felt that, whatever the imperfections, a relay of students from universities or straight from schools, doing the work with some enthusiasm, born perhaps of curiosity, if only for half a year, would give more to the villages than the reluctant low-grade salaried employees. Do not let us ignore this “stop-gap” solution.

Then, quite differently, let us think of the Elder Brother situation, where, with young offenders or with others such as children in care, the young volunteer need not be on the defensive; need not apologise for the fact that he is young or that he is a volunteer. These are his great advantages. This is what enables him to come in and make a social break-through in human relations that the adult cannot make.

Also, acting as a catalyst, it may be a young volunteer who is best

able to open up a new area to the service of local volunteers. I sometimes call this the "Trojan Horse" technique. We have put such long-term responsible eighteen and nineteen year-olds into institutions and into towns where, having gained the confidence of the social welfare authorities from the inside, they can open the doors to let in a flow of local young volunteers from the outside.

Then there is the pioneering situation, where, in a new field (precisely because it is new) there has not yet developed a professional expertise which will be offended by the intrusion of the volunteer; where the volunteer, because he is a pioneer, is in fact helping to lay down what may later become a professional skill.

I suggest that we try to take advantage of the service of the young in such a way that they are not regarded as inferior substitutes. I remember asking which ward a boy of eighteen was working in at a psychiatric hospital in Birmingham. He said, to my astonishment, that it was one for mothers and babies. I asked if he was joking. But I had reckoned without an extremely percipient matron. She realized that that in a ward with women—there because of post-pregnancy depression, sexual assault or an intolerable husband-and-home situation, so that they identified the male of the human species with everything vile—the presence of an eighteen year-old boy, manifestly innocent, could have an invaluable therapeutic effect.

In work with old people I do not think it is for sixteen, seventeen or even eighteen or nineteen year-olds to show the psychiatric insight of the professional caseworker. The adolescent who when visiting the elderly can show understanding of the problems of imminent death is himself a little monster. What is the role of young people in such situations? It is surely to stave off premature senility by their freshness and vital youthfulness. A friend of mine takes youth club members to old people's hostels, packs them all into a motor coach and takes them off to a ten-pin bowling alley and gets the old ladies and gentlemen on to the floor. Their arthritic hands can hardly handle a ball. So a boy holds their hand. Isn't that a thrill for an old lady?

Finally, a word about training. I suggest that the training which is really significant and economic is the training of the potential "consumers" of volunteers. One afternoon spent with matron and her ward sisters would be a better investment than fifty-two one-week courses for young volunteers. But for heaven's sake do not call this "training" because we adults do not need training! We will of course attend a conference every two years!

I think also that we must "graduate" our patterns of service for

young people. What youngsters are doing at school is not what they should be doing at eighteen when they have perhaps a few months free for full-time service. What they do at university must not be a repetition of what they did in those few months; and what they do as adults must be different again. They must grow up in volunteering; they must develop and mature. To pursue just one line—supposing it were mental health—I would like to see fourteen, fifteen and sixteen year-olds organizing “Peter Pan” Clubs for mentally-handicapped children. (They are called Peter Pans because mentally they never grow up.) I would like to see this age group visiting their homes, collecting these children, taking them to the church hall or youth club and giving them their friendship; and remember what Dr. Miller, the Medical Officer of Health of Birmingham has said, that “no child is too young but that he or she cannot give some assistance to a mentally handicapped child of his own age or younger.” When our young people reach the age of seventeen or eighteen some of them have a few months free. Now you can plunge them, full-time, amongst the professionals at the lowest echelon, into the wards of mental hospitals where they really are in the battle front, and they must do as they are told. But a few months later they will have reached universities. Then they should be protesting vocally at what they saw in those mental hospitals. If they do not protest when they are at university, they never will. Let them join the political party which they think will introduce reform in this field; let them in the long summer vacation, with a group of friends, try and do better, perhaps organize a camp or a holiday for the mentally handicapped. When they become adults, let them see if they can reproduce their own local version of that wonderful historic place in Belgium, Gheel, with its fostering community for the mentally handicapped. The process should be one of maturing the whole time. I feel dismay, frankly, when I hear of university students decorating old people’s homes. This is what they should have been doing when they were fourteen or fifteen; university students should be applying their technical, intellectual abilities, or leadership capacity to involve others in projects.

One last quotation to cheer you all up, comes from another eighteen year-old boy’s letter : “When the worst has been said about us, this at least can be said, that the bad volunteer is never half as bad as the bad professional !”

The Human Animal*

C. H. Waddington

The biologist who looks from his professional standpoint at the human race sees man, of course, first as an animal : *Homo sapiens*, one of the species belonging to the family of primates, who are a subclass of the mammals and a branch of the great vertebrate stock. Even that bald identification carries with it many implications and it is as well to begin by enquiring just what they are.

From the earliest beginnings of scientific enquiry until quite recently, biology has been in two minds as to how to envisage the essential nature of animals and plants. One tendency has been to see them as nothing but rather elaborate machines. Descartes can be taken as an early and fairly extreme exponent of this view. The other tendency has been to suggest that, quite apart from any question of a specifically human soul in the theological sense, all animals and plants contain in their essence some non-material or vital principle. Even many of those who provided straightforward causal or mechanical explanations of some particular activities of living things have frequently argued that, over and above such detailed processes, or, if you like, behind them, there must be some essential, living, non-material agency. This was the view, for instance, of Harvey who, with his discovery of the circulation of the blood, actually did considerably more than Descartes himself to reveal some of the mechanical processes on which animal life depends. The logical opposition between these two views grew deeper as knowledge of material mechanisms became more clear-cut and more precisely formulated. It reached its height perhaps in the latter years of the nineteenth century, at a time when the physical scientists were profoundly convinced that matter consists of billiard-ball atoms and that is all there is to it. By this time the practical successes of physical theory were so great, and had won for it such a dominating position in scientific thought, that the few remaining vitalists, such as Driesch, had almost the position of isolated eccentrics.

Within a decade or two, around the turn of the century, the whole

* First published in *The Human Frame*, edited by Julian Huxley, and reprinted by permission of the publishers, George Allen and Unwin Ltd. The author has sent it to us as relevant to the issues raised in our series on Sir Alister Hardy's Gifford Lectures.

picture changed radically, and the long-standing "vitalist-mechanist controversy" effectively vanished from the scene of biological thought. It disappeared because it was borne in on both sides that they had been over-simplifying matters. On the one hand, the physical scientists discovered that it is inadequate to reduce matter to a collection of impenetrable and unchanging billiard-ball-like atoms. They found themselves instead forced to think in terms of subatomic particle, wave-mechanisms, relativity and the inter-convertibility of energy and matter, and even at a loss to support the principle of causal determinacy. No force was left in the statement that living things were nothing but matter, since it had transpired that matter itself was still a most incompletely comprehended mystery.

At the same time, thinkers about biology realized that when simple units become structurally arranged into complicated systems, these systems can exhibit new properties which can be understood by hindsight but not necessarily by foresight.¹ That is to say, certain properties of the units may never be exemplified except in the conditions created by the assemblage of the units into organized structural complexes. The crucial point is that one cannot expect, from examining the behaviour of the units in isolation, to deduce all the activities which may be shown by a suitably structured arrangement of them; any more than by looking at a few pieces of wire, glass, plastics, nuts and bolts, etc., we could deduce that when suitably arranged as an electronic computer they could beat us at chess.

It became obvious, in fact, that the explicative power of architecture or organization—what has sometimes been rather grandiloquently referred to as emergent evolution—is so enormous that any temptation to invoke a vitalistic principle over and above this, almost totally vanishes. We can safely say that living things are complex arrangements of "matter", but since we have scarcely any clue to what matter is, and the main information we have about complex arrangement is that it is almost incredibly efficient at producing unexpected results, this statement can do little more than allay uncalled-for philosophical qualms, and in point of fact adds next to nothing to our understanding of the situation.

Biologists were then able to devote themselves with an open mind to the study of their proper subject-matter, the living world. One aspect of their endeavour has been to try to discover what should be taken as the basic units out of which living things are built. Putting it very briefly, the conclusion that has emerged so far is that the most characteristic processes of life depend on the activities of

protein molecules operating as organic catalysts or enzymes which speed up certain reactions to rates much faster than they would otherwise show; but that the specific character of these enzymes is determined at a more fundamental level by the hereditary factors, of genes, in whose composition nucleic acids are probably more important than proteins, which an animal or plant inherits from its parents.

These studies on the basic mechanisms of living processes do not offer much illumination on the problems of how human life should be conducted. More suggestive insights arise in connection with the other major aspect of biological study, that is, the investigation of the ways in which the ultimate units are combined together. The most important point is an extremely general one, namely that all biological organization, whether of cells, individual organisms or populations, is involved in temporal change. Life is through and through a dynamic process. Any mode of thought which attempts to attribute to man or any other organism any form of unchanging essence, or any character that is conceived as *being* rather than *becoming*, flies in the face of our whole understanding of biology.

The flux of becoming which is so characteristic of all living things is perhaps most clearly and inescapably expressed in the phenomena of embryonic development. We can watch a fertilized egg begin its life as a small almost featureless lump of living material, and gradually develop into an adult of considerable obvious structural complexity. In many cases, for instance in birds, it carries out this performance inside an eggshell which effectively insulates it from outside influences, except of such a crude and general kind as a reasonable temperature. It is clear that the fertilized egg must already contain within it substances whose reactions with one another suffice to ensure the production of the various different organs and tissues out of which the adult is built.

One of the best analogies for the type of process that must be going on is the homely one of cheesemaking. A mass of milk-curd infected, perhaps by chance or by careful design, with appropriate strains of bacteria will, if left quite to itself in a cellar, pass in a stately manner through a series of changes by which it becomes metamorphosed into a Stilton in all its glory of ripeness. In a developing egg, the situation has many similarities with this, but is much more complex. In the first place, one and the same mixture can develop as it were into a Cheddar, a Camembert, a Brie, etc., as well as into a Stilton. The egg, composed of the cytoplasm together with a collection of hereditary genes, can develop into a liver as well as lungs, nerves as well as muscles, and in fact into a

large range of sharply distinct types of cells and organs. It does not follow only a single pathway of change, but has a number of alternative possible pathways open to it, one part of the egg taking one path and another a different one. Again, it is a fact of observation that these pathways of change are rather resistant to modification. A part of an egg may develop into muscle or it may develop into nerve, but it is difficult to persuade it to develop into something intermediate between the two. Once it has started developing, for instance into muscle, it shows a strong tendency to produce a normal muscle even in the face of interferences that might be expected to divert it from its normal course and produce an abnormal end-result. The paths of change are, as I have said elsewhere, *canalized*. They are not like roads across Salisbury Plain, where it would be relatively easy to drive between them over the grass. They are more like Devonshire lanes; once you are in one, it is very difficult to get out again and you have to go on to where the lane ends.³

These pathways of change, along which the various parts of the egg proceed as it develops, are inherent in the constituents of the egg at the time when it begins its development after fertilization. The specification of the direction the paths take, and the nature of the end-result to which they lead, is in the main carried out by the hereditary genes which the egg has received from the two parents. If one of these genes is changed, some of the paths will be altered and an abnormal end-result obtained. There is no simple English word which can be used for this concept of a pathway which is followed by a system, and whose characteristics are defined by the nature of the system which enters on it. I have suggested that we might call them "creodes", from the Greek words $\chi\rho\eta$, necessity, and $\delta\delta\acute{o}\varsigma$, a path.

A system is exhibiting creodic behaviour when it is changing along the course whose direction is defined by the system's own essential nature. It is not being creodic in so far as it is diverted from this path by the accidents which it encounters on its way. One could, of course, discuss how far the development of individual human personality, or the socio-economic development of particular societies, are or are not creodic in nature. Such questions are interesting but I do not think that our biological knowledge is necessarily very enlightening in connection with them.

It is more to the point here to turn to consider the other major type of temporal change with which biology is concerned. That is, of course, the process of evolution. The whole realm of living things as we know them today has been brought into being by evolution;

and this, of course, includes man. The notion of evolution is by now not solely a theory about certain processes which may go on in the living world, but is one of the essential dimensions within which biological thought must take place. We cannot think of living things in modern biological terms without at the same time employing the concept of their evolution.

From the very beginnings of biological thought, for instance in the works of Aristotle, it has been clear to mankind that living things can be arranged in some sort of natural order; an order which in late medieval times was referred to as the Great Ladder of Being.³ This stretched from the lowliest creatures, such as slugs and worms, through a series of intermediates to the lion, the lord of beasts, then to man, and then above him to the circles of angels and archangels. As this classification implies, untutored man has never hesitated to consider some of the classes of living things as lower and others as higher. Selfconscious and sophisticated thinkers may sometimes be heard to enquire by what right man classifies the living kingdom into a hierarchy in which—is it by chance?—he turns out to be at the top. Nearly all biologists, however, essentially agree with Aristotle in this matter, perhaps mainly for reasons rather similar to those by which Doctor Johnson refuted Berkeley; they would be willing to consider the claims of a worm to a higher status than man when the worm comes up and presents them. The overwhelmingly general view of biology, indeed, is that there not only is a natural order but that this is an evolutionary order, the higher stages having appeared on the earth's surface later than, and by derivation from, the earlier.

This type of evolutionary progression from lower to higher is technically known as *anagenesis*.⁴ It has been discussed by many recent authors and in particular by Julian Huxley, who has emphasized the fact that it is by no means the only type of result that evolution brings about. As he points out, evolution may bring into being a type of creature which succeeds in surviving with comparatively little change through long periods of geological time, a process for which he uses the word *stasigenesis*. Again, another typical result of evolution in the non-human world is the breaking-up of a group of organisms by branching into a large number of species which differ in detail while still resembling one another in the broad outline of their type of organization—a process for which Rensch has coined another technical word, *cladogenesis*.⁴ But these two kinds of evolutionary result are embroideries on a main theme; which is the succession, throughout the history of life on the earth, of a series of dominant types of organization, each a

clear-cut advance on what went before—the unicellular organization succeeded by the multicellular, the primitive multicellular types, such as sponges, succeeded by more complex types such as sea-anemones and worms, those again by insects and fish, the fish by amphibia, reptiles, birds and mammals.

How, in terms of these concepts, do we see the situation of man? His appearance on the world scene is clearly not a case of mere stasigenesis, since he has changed from his non-human ancestors. Again, his mastery of conceptual thought and social communication mark off his biological organization as something radically different from that of his nearest biological relatives, the higher apes : he therefore cannot be considered the product of mere cladogenesis, but must be considered to have resulted from anagenesis, a real progressive change and not a mere modification in detail.

If one inspects the anagenetic changes which have gone on in the sub-human animal world, it is not too difficult to discern some of their general characteristics. For instance, one of the most important of them has been an increasing independence of the external environment, exemplified, for instance, in the evolution of creatures that can live on dry land or even in the air, as well as in the sea, and of animals which can maintain a constant body-temperature. Again, there has been an evolution of more precise and sensitive sense-organs, and a concentration of the nervous systems into a single central and ever further-evolving brain, leading to improved capacities of knowledge and feeling and awareness in general, and to the emergence of mind as an increasingly important factor in evolution. Both these trends can be considered as aspects of the evolution of an increasing capacity to make use of, or exploit, the openings for life offered by the earth's surface. Both also would lead to what, considered from the point of view of the individual, must be considered as an increased richness of experience. It is immediately obvious that the evolution of man is a further step in the same direction. No creature has been able to become so independent as he of the accidents of its environment; no creature has such faculties for experiencing not merely the elementary processes of the world, but the relations between them. The capacities with which man's evolution has endowed him are an immensely extended carrying-forward of the main progressive lines of pre-human evolution into radically new realms.

The most important respect in which the appearance of the human race extends the lines of advance of the sub-human world are in connection not with the results brought about by evolution, but with its very mechanism. Evolution depends, of course, on the

passing from one generation to the next of something which will determine the character which that following generation will develop. In the sub-human world this transmission of what we may call, in a general sense, "information" is carried out by the passing on of hereditary units or genes contained in the germ-cells. Evolutionary change involves the gradual modification of the store of genetically transmitted information. A few animals can pass on a meagre amount of information to their offspring by other methods: for instance, in mammals some virus-like agents which have effects very like hereditary factors may pass through the milk; in some birds, by the adults serving as models whose song is imitated by the youngsters, and so on. Man, alone among animals, has developed this extra-genetic mode of transmission to a state where it rivals and indeed exceeds the genetic mode in importance. Man acquired the ability to fly not by any noteworthy change in the store of genes available to the species, but by the transmission of information through the cumulative mechanism of social teaching and learning. He has developed a sociogenetic or psychosocial* mechanism and evolution which overlies, and often overrides, the biological mechanism depending solely on genes. Man is not merely an animal which reasons and talks, and has therefore developed a rational mentality which other animals lack. His faculty for conceptual thinking and communication has provided him with what amounts to a completely new mechanism for the most fundamental biological process of all, that of evolution.⁵

It is becoming common to say now that man must take charge in the future of his own evolution, but many who say this seem to be implying no more than that man must try to control the store of genes which are available and which will be available in later populations. In point of fact, the type of evolution of which man should take control is one which he has as it were invented for himself. His biological evolution—that is, the changes in the genes in future populations—will presumably continue, but these changes seem likely to be of relatively minor importance, at least in the near future, although they might eventually become a limiting factor.⁶ For the alterations in which mankind is at present primarily interested—the types of change, let us say, which distinguish the societies which produced Newton, Shakespeare,

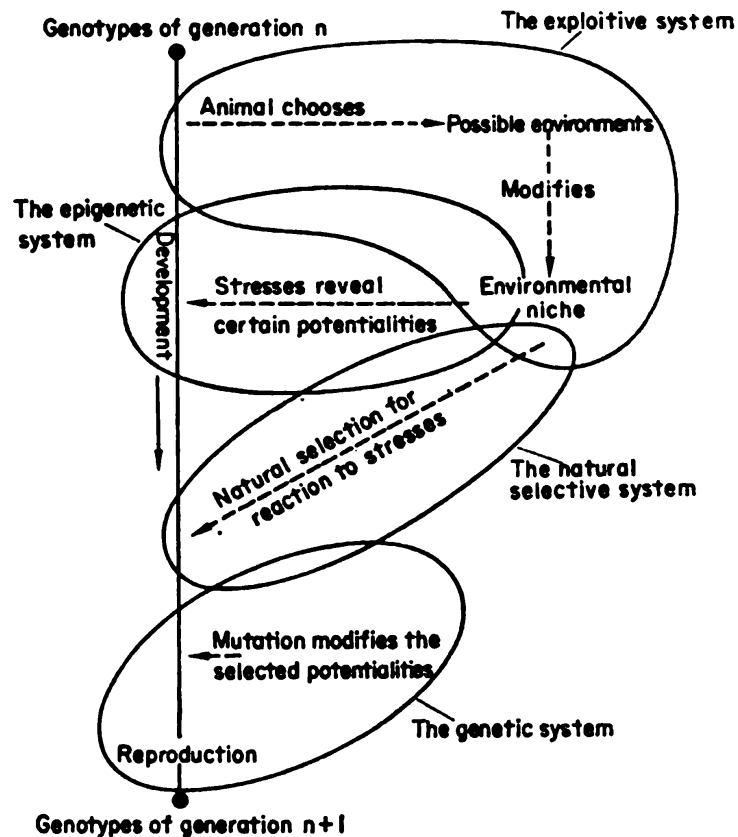
* "Psychosocial" is Huxley's word. To my mind, it suffers from some redundancy, since the social can hardly avoid being psychological. I prefer to use "sociogenetic", which emphasizes the importance of the mechanism as a means of transmitting information from one generation to the next, which is the crucial point.

Buddha, Confucius and Jesus Christ from scattered bands of neolithic hunters—the crucial evolutionary mechanism is one which depends on the sociogenetic transmission of information by teaching and learning.

If we can, in this way, see mankind, as at present the most advanced phase in a process of progressive or anagenetic evolution in which the whole living kingdom is involved, it would seem to follow, clearly enough to convince most of those sympathetic to Humanist thought, that it is man's duty, not only to mankind but to the living world as a whole, to use his special faculties of reason and social organization to ensure that his own future evolution carries forward the same general trend.⁶ This is, I think, the accepted Humanist position, as it is put forward for instance by Julian Huxley, Needham, and others, and accepted by bolder minds even among those who adhere to traditional religions, such as Canon Raven and Pierre Teilhard de Chardin.⁶ I certainly do not dissent from the conclusions which such thinkers have drawn as to man's duty at the present time, but I feel that our actual understanding of the biological world and of man's nature allows us to carry the argument forward by two not unimportant steps. These arguments, which I shall now advance, are by no means yet generally accepted.

In the first place, we may ask whether the process of anagenesis which can be seen in the animal kingdom, and the farthest step in this direction which has been taken by the appearance of the human race, are mere contingent happenings, which have actually transpired but for which no underlying cause can be envisaged. I do not think so. I think one can see reasons why processes of anagenetic kind must be among the types of change which evolution will bring about. The biological mechanism of evolution is, as we have said, founded on the genetic transmission of information from parent to offspring through the formation of gametes and their union to form fertilized eggs. This process, however, constitutes only the essential transmission by which the generations are connected. Several other components are necessary to make up the total machinery by which evolutionary change occurs. The best-known of these components is, of course, natural selection, which by favouring the reproduction of certain individuals more than that of others brings about alterations in the store of genes as they pass from generation to generation. But natural selection and heredity do not work alone. As I have argued in more detail elsewhere,⁵ we have to take account also of the capacity of animals to select, out of the range open to them, the particular environment in which

they will pass their life, and thus to have an influence on the type of natural selective pressure to which they will be subjected. For instance, a rabbit or a blackbird, released among fields, will take refuge in the hedges or banks, while a hare or a lark will choose to live in the open grassland. And again, we should not forget the type of responsiveness which comes to characterize the various developmental pathways which the egg can follow, which has an influence on the effects which will be produced by any new hereditary modification that may occur. Thus, the complete evolutionary mechanism, or evolutionary system as I have called it, comprises at least four major sub-systems—the genetic system, the natural selective system, the exploitive system, and the developmental or epigenetic system.



The Logical Structure of the Biological Evolutionary System.

Darlington⁷ added a new dimension to evolutionary thought by pointing out that the genetic system would itself be subject to natural-selective pressures, and might itself evolve in such a way as to make it more efficient in passing on hereditary information in a form in which it is easily utilizable for the furtherance of evolutionary advance. For instance, the fully developed system of sexual reproduction found in the great majority of organisms,

which is based on two sexes whose gametes unite to produce the offspring, is a very efficient mechanism for evolution, since it provides a way of recombining hereditary factors into a large number of new combinations, some of which may prove useful; but it itself is a considerable evolutionary achievement, since the most primitive living things, such as bacteria, do not possess it, though some of them have less advanced, so-called *parasexual* mechanisms which make some degree of recombination possible.⁸ Now this same argument can be applied to the other sub-systems, and indeed to the evolutionary system as a whole. If we start with a world of living things capable of evolving, then not only will they do so, but the very pressures that bring about evolution will also tend to bring about an improvement in the mechanism by which evolution is mediated. Put in such abstract terms, this may sound a formidably complex notion, but actually it is easy to find quite everyday analogies for it. At the beginning of the Industrial Revolution, for instance, there were many factories capable of producing manufactured products; and the forces of competition between the factories, which we may for the purposes of this analogy compare to natural selection, not only brought about an evolution of the factory products (which correspond to the animals) into more elaborate and better fabricated articles, but equally brought to pass improvements in the organization of the factories themselves, that is to say, in the mechanisms by which the articles are produced. Again, to take another example, if a group of beginners take up the practice of playing card games with one another, they would not only become more skilful at playing the game they first start on, but are likely to pass on to playing subtler and more complicated games. Thus, this, as it were, two-tier evolution—an evolution of the end-product itself and also an evolution of the mechanism by which the end-product comes into being—is quite a normal sort of happening.

If we regard the biological evolutionary process from this point of view, we can see reasons why evolutionary changes, of the general character of those which are actually found, should have been expected to occur. One of the major components on which evolution depends is what we have called the exploitive system—the system by which animals choose and make use of the various possibilities for living which the world offers them. One of the evolutionary pressures which is bound to arise is, therefore, a tendency for an improvement in efficiency of the exploitive system. This is most clearly expressed in the evolution of the sense-organs and nervous system, and is, as we have seen, one of the major components of anagenetic evolution as we can trace it from the

lowest flatworms and jellyfish up to the higher vertebrates. Again, there will be evolutionary pressures acting to improve the genetic system. The enormous improvement—in rapidity of action, subtlety of recombination and regrouping of items, and so on—which has been brought about by the human socio-genetic system, as compared to the biological genetic system, can therefore be seen as one example of a general category of change which evolution must have tended to produce.

We can in this way at least begin to envisage the course of evolution as we find it, not as something completely accidental but as exemplifications of general trends or types of change which we should expect. We shall perhaps never be able to assign precise reasons why that particular change which actually occurred was the one that did so out of all those possible. It is only in the broadest outline, when we are considering its general direction and categories of effects rather than particular effects, that we can see evolution as a creodic process whose course follows from the characteristics of the system itself; but even an understanding in very broad outline is preferable to the state of complete incomprehension which can do no better than accept what it finds in the living world as mere “happening to be so”.

Although we can see that there would be an evolutionary pressure towards the production of an improved system of transmitting information, and that if one were to appear which was in any way more effective than the biological genetic system, it would bring with it great evolutionary advantages, we still could not have foreseen that this step would have been taken by means of the very remarkable and peculiar mechanism which seems to characterize the human species. Even the remarkable work which is now being carried out on the behaviour of sub-human animals, in which the psychological sage has not yet been attained, gives us little hint of what to expect.⁹ Just how remarkable the human system is has only recently been brought home to us, largely as the result of the work of the psychologists.

It is clear on first principles that any system of social transmission of information can only operate if in some way the potential recipients can be brought into a condition when they are ready to accept the content of the messages which are directed at them. In man, it appears that the moulding of the newborn infant into an effective recipient of social communications involves a most surprising process of projection and re-introjection of certain of his own impulses, together with the building up of internal representatives of parental authority, and a whole peculiar

mechanism which is described in terms of such concepts as the super-ego, the ego-ideal and so on. At first sight, the story the psychoanalysts tell may seem extremely unlikely, but it seems to me they have now produced enough evidence to render it rather plausible, at least in broad outline; and on reflection one realizes that unless one is prepared to make the question-begging assumption that man is simply born socially receptive, some sort of process or other would have to be imagined by which he is brought into this condition.

Now, the second point I wish to urge, in extension of the normal Humanist argument, is that man's ethical feelings are essentially involved with, and in fact are actually a part of, the mental mechanism by which he is developed into a being capable of receiving and accepting socially-transmitted information. Unless some sort of authority-bearing system is developed in the mind of the growing individual, social transmission would break down because nobody would believe what they were told. One part of this authority-bearing system develops into what we call our ethical beliefs, to which indeed we usually attach an almost overwhelming authoritativeness. Another aspect of the system seems to be, unfortunately, a tendency to develop feelings of inferiority, guilt and anxiety—a situation in which one may, perhaps, glimpse, from the scientific angle of approach, the human predicament which is enshrined in the myth of the Fall of Man.*

Obviously more than mere acceptance of authority is involved in a fully developed system for the social transmission of information. One can, and in later life one must, compare what one is told with objective reality, and reject what proves false. Education is to some degree concerned with such corrective verification. But all this is really a second-order process. There must first be a reliable system of transmission, which corresponds to biological heredity, before there can be a process of verification, which we might compare to natural selection. Again, it is certainly true that man's innate genetic constitution provides him with potentialities, which are presumably absent or very weak in other animals, for developing his social transmission mechanism. One of the most impressive pieces of evidence for this genetic predisposition is provided by the life of Helen Keller, who although blind and deaf from early infancy, nevertheless came to grasp the fact that "things have names," and thus showed that she had the basic faculty for

* These arguments are more fully developed in a recent book, *The Ethical Animal*.

apprehending language.¹⁰ But it is only with the development, normally in the first few months of life, of these innate capacities to the point where the child accepts transmitted information that man's second evolutionary system begins to function.

If this argument is accepted, the connection between evolution and man's ethical nature is much closer and more intimate than even most Humanists have previously recognized. It is not merely the case that we can see ourselves as part of an all-embracing process of evolution and therefore can recognize a duty to further the general evolutionary tendencies. According to the argument advanced above, man is characterized by the emergence of a new evolutionary mechanism based on sociogenetic transmission, and in this transmission the development of something akin to ethical belief is an absolutely essential item in the mechanism. The orthodox Humanist argument is that it would be a recognizably good thing if we took steps to see that our ethical beliefs effectively controlled the further course of evolution. What I am arguing is that our ethical beliefs *must* influence the course of human evolution, since that is based on a mechanism of which those beliefs are an essential part. The question that is really at issue is not whether evolution shall be guided by ethical beliefs, but what kind of ethical beliefs shall guide it.

What the situation of man calls for, in fact, is the formulation of some criterion by which one could judge as between the various ethical beliefs to be found in different individual men and women or different human societies. It is not sufficient that Humanists should demand that future human evolution should be guided by ethical principles, since inevitably some sort of ethical principles—quite possibly, as the psychoanalysts have taught us, unconscious or only partially conscious ones—will in fact play an essential role in bringing it about. What we should be aiming at is that the ethical principles themselves should be subject to assessment according to some more inclusive criterion. The real contribution of the study of human biology and human evolution will come when it is used to help in the formulation of this supra-ethical criterion.

If the essential reason why mankind develops ethical beliefs at all is because this is necessary as an essential cog in the machine of social transmission by which human evolution is brought about, then it follows that we can judge between different ethical systems by considering how far they fulfil their function in furthering human evolutionary progress. I am not for a moment suggesting that we shall find it easy to reach a clear, let alone an agreed answer, but we shall at least know what we are trying to do, and

this, though by no means easy, is well worth doing—for instance, when one is weighing against one another the values of individualism and collective organization, of nationalism and internationalism, of increase in population numbers and increases in standard of living, and so on through the list of the major moral and social quandaries of today.

The basic Humanist position, derived from considering man's place in the biological world, is that in approaching such problems we have to consider them in relation to what we know of the actual *course* of progressive evolution in the sub-human, and in particular of the human world. The arguments I have put forward in the last few paragraphs, although they go beyond the orthodox Humanist case, only serve to reinforce its conclusions. Evolution is the very essence of living. Life could, indeed, be defined as the state of a system which is capable of evolving, and the essential characteristic of man—if you like to put it so, the “soul”—which distinguishes him from the animals, is that he evolved by a mechanism that belongs to him alone, and which he alone can modify and improve.

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Postscript: We are allowed to print this extract from a letter C. H. Waddington wrote to Sir Alister Hardy, putting his views on Organic Selection and genetic assimilation, in connection with comments which Sir Alister had made in his Gifford Lectures. [Ed.]

"The part of the book I have so far looked at most thoroughly is, as you might expect, your discussion of the Lloyd Morgan and Baldwin ideas about Organic Selection. In spite of what you say I still think there is something rather different about what I said from what they said. Please don't think I say this because I want to ensure any sort of 'priority' for myself. I quite admit that my ideas are extremely close to theirs. They were however not actually derived from them. I don't believe I had ever heard of Baldwin and Lloyd Morgan when I first thought of the idea of genetic assimilation around 1942.

"The real difference that there is, in my opinion, between our ideas arises in fact just because we approach the same basic notions from different directions. You say on page 171 that between Darwinism and what you are talking about there is a 'real if somewhat subtle difference: a difference which it is essential that we should understand . . .'. I entirely agree with you and I also agree with your earlier remark (p. 163) that 'this is not just a slight subsidiary effect but is indeed one of the major factors in the evolutionary process.' But I think the point I want to make adds on to yours, in just as important a way as yours adds on to Darwinism."

"If I may somewhat exaggerate the matter to bring it into clearer focus, I should put the situation as I see it like this. The early writers about Organic Selection saw the importance of behaviour or habit and this is the point that appeals to you as a naturalist. But I think they did not completely see the point that the entities which undergo evolution are not simply populations of genotypes but are populations of developing systems; that is to say, organisms one of whose essential features is to undergo development, and moreover, development in which the environment plays a role as well as the genotype. In my opinion the conventional Neo-Darwinist theories of Haldane and Fisher (and to a lesser extent, Sewall Wright) are inadequate *both* because they leave out the importance of behaviour in influencing the nature of selective forces, *and* because they attach coefficients of selective value directly to genes, whereas really they belong primarily to phenotypes and only secondarily to genes. I still doubt whether Lloyd Morgan and Baldwin had got the second point.

"The way this emerges in their theory is as follows. Lloyd Morgan supposes that a population of a 'plastic' species can survive under new conditions of environment (page 167, point 8). He even sees that there will be some genetic variation in plasticity (point 9) but he explicitly separates the environmental modification from anything to do with the genotype (point

10). In points 11, 12 and 13 he seems to me to be postulating the occurrence of new gene mutations in genes quite unconnected with those involved in the variation of plasticity, these mutations being of a kind which tend to cause the organism to develop the appropriate modifications independently of any action of the environment. At least I have always thought that the point made under 14 on page 167 meant that there was a congenital predisposition to develop to the modified phenotype without any contribution from the environmental circumstances. This is also the way that Huxley (cf. p. 163) and Simpson have interpreted Lloyd Morgan. I suppose however that it would be possible to interpret it in a sense much closer to my genetic assimilation. The concept I want to resist is that the organism contains one set of genes which allow it to adapt to the environment and another set of genes in which mutations produce the adaptively modified phenotype independently of environmental influences.

“As to the importance in behaviour in evolution, I think I have been moving closer to your position and realizing more fully its central importance. I already began to have ideas along these lines quite a long time ago. In fact I wrote a paper about ‘Environment selection by *Drosophila* mutants’ in *Evolution* in 1954. In that I made a point that I notice you lay some stress on, namely that cryptically coloured forms have to behave appropriately if they are going to derive any benefit from their potential camouflage. At that time I wrote or spoke to Kettlewell and asked him if his light and dark moths did actually settle on the appropriate parts of the tree trunks, and a year or two later he published evidence that they did so. In my recent writings I have been stressing such points more and more, and suggesting that the next step in the mathematical exploration of evolutionary theory will be the application of Games Theory.”

Computer—servant or master

Donald Michie

It used to be possible to sweep the social challenge of computers under the carpet, with the dismissive phrase “high-speed morons”. Today, however, computers play draughts at a good club standard, solve difficult problems in logic, compose dull but passable music, outperform librarians in the relevant retrieval of certain classes of document, translate Russian into useful dog-English, and perform many other exacting tasks of a non-numerical nature. Clearly if we are to bolster our self-respect as humans in face of the new wave of machine accomplishments we may have to find some other way of doing it than by talking about morons.

Intelligence

My own research as a scientist is concerned with teaching computers *not* to be morons, and with attempts to find general rules for doing this. I am fairly optimistic, if that is the right word, about the rate of progress in our own and in other similar laboratories elsewhere, in Britain and abroad. I qualify the word “optimistic” because many people view the objectives of such work with deep unease. If informed that by the late 1970s the first intelligent machines will be in our midst, their dominant feeling would *not* be one of optimism, but rather of gloom and anxiety. I shall leave to a later stage the discussion of whether there is justification for these fears—de-humanization of life, mass redundancy among brain-workers, suffocation of man by surplus leisure, computer-aided snoopers and “thought-police”—and consider first in more detail what is meant by the concept of intelligence in a machine.

Turing's test

The problem of testing a machine to see whether it is intelligent was first discussed by the great British logician and computer pioneer, Alan Turing, who died in the early 1950's. It was from my personal association with Turing during the war and the early post-war years that I acquired my interest in the possibilities of using digital computers to simulate some of the higher mental functions that we call “thinking”. Turing proposed the following test. The machine was to be placed on one side of a screen and a human examiner on the other side. Conversation between man and

machine was permitted through the medium of a teleprinter. If after an hour or two's typewritten conversation the machine had managed to fool the examiner into thinking that he had been conversing with a human being, then according to Turing the machine's claim to intelligence should be conceded.

There was undoubtedly an excellent idea here, and one which foreshadowed the modern trend towards "conversational computing". Unfortunately Turing's test, in its original form, has been refuted by an ingenious conversational computer program called DOCTOR written by Joe Weizenbaum of Massachusetts Institute of Technology. I reproduce below a fragment of a conversation with DOCTOR.

HOW DO YOU DO. I AM THE DOCTOR. PLEASE SIT DOWN AT THE TYPEWRITER AND TELL ME YOUR PROBLEM

I wish I had my baggage

CAN YOU ELABORATE ON THAT?

I am not quite clear as to what sort of elaboration is wanted

DO YOU BELIEVE IT NORMAL TO BE NOT QUITE CLEAR AS TO WHAT SORT OF ELABORATION IS WANTED?

Yes, quite normal

I UNDERSTAND

I have lost my baggage

YOU SAY YOU HAVE LOST YOUR BAGGAGE

I feel lost without it

DO YOU OFTEN FEEL LOST WITHOUT IT?

No, this is the first time

WHY NOT?

Because I normally do not lose my things

WHAT OTHER REASONS MIGHT THERE BE?

My mother trained me not to lose things

TELL ME MORE ABOUT YOUR FAMILY

I have lost my baggage

DID YOUR PARENTS EVER LOSE YOU?

At first sight this has an air of (slightly scatty) plausibility. In reality it is a trick—the same trick as most of us employ when keeping a conversation going, perhaps at a cocktail party, while our mind is elsewhere. Instead of attending to the sense of our companion's remarks we merely pick up key words (e.g. “mother”) to which we reply with stock phrases (e.g. “Tell me more about your family”). If really stuck, we merely play back our companion's last remark with some suitable trimming.

This is essentially how DOCTOR works. Its success as measured by Turing's test is impressive. Patients in Massachusetts General Infirmary were allowed to converse with the program, after being warned that a computer, not a doctor, was at the other end of the line. 60 per cent of them subsequently rejected this information and insisted that they had been in communication with a flesh-and-blood doctor—“No machine could understand me that well”.

So Turing's test has to be refined if it is going to be useful in the way intended. Perhaps we should insist that the machine should fool Nobel Prize-winning scientists rather than hospital patients, or alternatively perhaps we should direct attention to whether the examiners feel that they have been having an *intelligent* conversation. To apply these definitions, they do not need to be philosophically watertight. Machine intelligence is not an exercise in philosophy but an engineering project.

One side of this engineering project is concerned with defining and implementing the separate components of mental aptitude—such capabilities as trial-and-error learning, pattern-recognition, generalization from individual instances, deductive and inductive reasoning, problem-solving and linguistic skill. Somehow these different capabilities, each represented in the computer by a different program, have got to be integrated together so that they function as an organized whole. We have some ideas about how this co-ordination of computer programs might be achieved, but these are still rather primitive and will not be discussed here. What I shall do is to take *one* of the constituent capabilities as the subject of a brief digression, before considering some of the social and psychological apprehensions which are voiced concerning the development of intelligence in computers.

Learning

The mental capability which I shall single out is trial-and-error learning. This is the simplest and lowest form of learning, in which the learner proceeds entirely *ad hoc*. He says to himself merely “Have I been in this situation before? If so, what did I do? What

were the consequences of my action? If satisfactory, I shall choose the same action again. Otherwise I shall try something else”.

Note that no *generalization* from experience is involved. Situations are separately assessed in the light of past experience, without attempting to link them together into meaningful categories according to higher-level considerations. The surprising thing about pure trial-and-error learning is how far a computer system can get using this trick alone, without venturing into the realm of generalization. Samuel's famous computer program for playing checkers (draughts) was able to train itself to a passable amateur level with a system of pure trial and error (Samuel called it “rote-learning”), even before its standard of play was further improved by the addition of a learning-by-generalization component. The program asked itself “Have I been in this checkers position before? If so, what move did I make? What are the consequences . . . ?” etc. Some years ago I extracted much spare-time amusement from constructing a trial-and-error machine out of matchboxes, whose task was to learn to play tic-tac-toe (noughts and crosses). More recently with the help of my colleague R. A. Chambers I have developed a computer version, and this has been tested on a difficult problem which on the face of it does not look in the least like a game.

Pole and Cart

The task is to learn to control an unstable physical system which I shall call the “Donaldson system”, after the Cambridge physiologist who first used it in studies of machine learning. A motor-driven cart is free to run on a straight track of limited length, and balanced on it is a pole pivoted at the base which is free to fall down either left or right along the line of the track. The motor is controlled by a single switch which determines at each instant whether the motor's force shall be applied in the left or the right direction. The task is to manipulate the switch so as to keep the cart running backwards and forwards along the track without either running off the end or dropping the pole. This task has obvious similarities to one which most of us attempted, with eventual success, during childhood—namely learning to ride a bicycle. Inevitably the child learns by sheer trial and error to begin with.

Our computer program does in fact learn to master the Donaldson system—without utilizing any special knowledge about it or being “taught” by any human or mechanical mentor. The program is no more, and no less, designed to tackle a pole and cart than to learn to guide a car round a closed track or to monitor and control some simple industrial process. In this it illustrates a

property which is a 'must' for any component of an intelligent computing system—*task-independent capability*. The striking feature of the human brain is not so much any outstanding performance at any particular task but rather its ability to make a useful, even if fumbling, attempt at almost *any* task.

Co-operation

An option in the program allows the human user to intervene and perform the control task himself, and a further option permits program and user to work on problems co-operatively, each benefiting from the other's trials and errors. I believe that this type of co-operative interaction between intelligent user and intelligent machine will come more and more to the forefront, and indeed will set the pattern in the future.

When thinking recently about the subject of particular mental capabilities, of which trial-and-error learning is just one example, I amused myself by copying out the late Ludwig Wittgenstein's list of what he called "language games" and measuring each item against the present state of the art in machine intelligence. I reproduce his list below.

- Giving orders and obeying them—
- Describing the appearance of an object, or giving its measurements—
- Constructing an object from a description (a drawing)—
- Reporting an event—
- Speculating about an event—
- Forming and testing an hypothesis—
- Presenting the results of an experiment in tables and diagrams—
- Making up a story and reading it—
- Play-acting—
- Singing catches—
- Guessing riddles—
- Making a joke—telling it—
- Solving a problem in practical arithmetic—
- Translating from one language into another—
- Asking, thanking, cursing, greeting, praying—

Now let us run through the list again. *Giving orders and obeying them* has been a routine function of computing systems for many years. *Describing the appearance of an object, or giving its measurements*, is a difficult task facing those engaged on "hand-eye" computer projects. For a machine to inspect an object with a mechanical "eye" and then manipulate it with a mechanical "hand" the first step must be to form a description from the visual image.

Constructing an object from a description (e.g. building a tower from a photograph of a tower) is among the most difficult long-term goals of hand-eye projects—such as Marvin Minsky’s at M.I.T. and John McCarthy’s at Stanford, U.S.A. *Reporting an event* is beyond present technique. Again synthesis of a description from primary sense-data is the first step. The second is use of the synthesized description to generate appropriate language text. *Speculating about an event* is even further beyond present technique. *Forming and testing a hypothesis* is a process under active current study. *Presenting the results of an experiment in tables and diagrams* is a routine operation of contemporary computer programs for survey analysis. *Making up a story* is beyond present technique, although *reading it* from printed text is now marginally feasible. *Play-acting* would require a great extension to the arts of robotics: as for *singing catches*, humming the tunes is easy to program, but singing intelligibly is not. *Guessing riddles* is under active current study, but *making a joke* is very far beyond present technique. *Solving a problem in practical arithmetic* presents no difficulty even to primitive computer systems. *Translating from one language into another* is just attaining marginal feasibility by commercial criteria. *Asking, thanking, cursing, greeting, praying* are activities which express emotions, attitudes, desires, sympathies. It is meaningless to talk of them except on the basis of consciousness and self-consciousness in the intelligent system concerned. Many workers in machine intelligence believe that success on a really significant scale will hinge on the degree to which machine-representations of these phenomena can be devised—at least to the degree of permitting the machine to form some sort of internal logical model not only of the external world but also of itself in relation to that world.

Who is to be master? I am inclined to regard the dilemma “Computer : servant or master” as a false one. To clear the ground for what I have to say under this heading, let me first sketch a division of tasks into three categories.

1. *Tasks suitable for humans alone.* This category is concerned with value, i.e. what sort of result do we want to see? For example, what weather do we want, irrespective of problems of prediction. Or what rate of road deaths relative to motorists’ convenience are we prepared to tolerate?

2. *Tasks suitable for computers alone.* These tasks are those of complicated detail and “tactical” decisions: for example prediction of weather, or control of a city’s traffic light system. The case of traffic lights has a special point of interest in the present context:

the citizen seems prepared quite happily to accept this form of computer interference in his life, even though he may express great alarm over other forms. The implication is, I think, that the emotions of doubt and opposition to the computer revolution do not in reality hinge on a matter of principle—that control by machine is a bad thing. On the contrary it seems to be a matter of the appropriateness or otherwise of computer control in the given case. As applied to traffic lights, the sheer inhuman equitableness of computer control has a positive appeal. I believe that something similar is involved in the popularity among schoolchildren of computer programming as opposed to Latin. With programming there is no conceivable vulnerability to possible biases or prejudices of the teacher. The entire proof of the pudding is (if I may be allowed to mix a rather sticky metaphor) in the running of it on the machine.

3. *Tasks suitable for co-operation.* These are tasks which are either too difficult at present for either partner to do alone or are in some way intrinsically suitable for conversational computing. In the second category I would place the use of a console connected to a conversational computing system as a “home tutor” whereby the user can be steered through courses and subjects of study of his own choosing. It is not always easy, once one has taken the plunge into conversational computing, to distinguish between a program to *help* you do something and one to *teach* you to do it.

In this category of intrinsically conversational uses is the “question-answering” facility which will one day become available as a service. Not only schools, hospitals and commercial firms but also the ordinary householder will be able to tap information and problem-solving power from a national computing grid with the same ease and immediacy as that with which he now draws on central supplies of gas, water and electricity. Along with question-answering services, which will allow us to enquire about restaurants in our locality or politics in Paraguay, will come the games opponent, the puzzle-setter, and the quiz-master. An increasing demand upon computer systems will be for aid in coping in a stimulating way with the growing burden of leisure.

Helpers and hobbies

For many years only the rich will be able to install terminals in their private homes, but I have no doubt that the coming decade will see public telephone boxes up-graded to include a keyboard terminal connected to the computing grid, and it is well within the reach of foreseeable software technology to offer services which will tempt ordinary people to place their half crowns in the slot.

Will the computer “take over”? In the world of information-handling of course the computer will take over. The question is will it take over as servant or master? To this one must reply : not as servant nor as master, but as tutor, as secretary, as playmate, as research assistant. None of these in their human embodiments is a servant or a master; each is better described as a helper. The lessons of experience with computers do not support the idea that brain workers will be thrown out of employment by the machine. The indications are that as soon as brain workers learn to use the new facilities their work will be enlarged and enriched by the new possibilities which become available to them. The working week will, of course, continue to shorten in advanced countries as productivity rises, but this is a question of technological progress in general, and not specifically a consequence of computers. Whether the increase of leisure time is felt as a burden or a joy will depend on the means available for developing spare-time activities which can exercise and challenge man’s varied capabilities.

It is my confident prediction that computer-aided self-instruction in science, history and the arts will have become a consuming hobby of large sectors of the population by the turn of this century. As for fears sometimes expressed that by then Big Brother will be able to watch us over the computational grid, or that our superiors or your neighbours may be able secretly to tap our dossiers kept on the universal electronic file, these fears can be dismissed. It is easier to devise “unpickable locks” in a computing system than in the world of bank vaults and safes.

The conversational terminal

The present fears of computers represent nothing new. When the first passenger-carrying railway services were opened, eminent medical men warned that if the human frame were transported at these speeds, fatal haemorrhages and seizures would be caused. There is a good parallel here. Imagine framing the question “Railway train : horse or rider”. The answer, of course, is “Neither horse nor rider but *travel assistant*”. As soon as people discovered this, their fears of rail travel disappeared. When computer terminals can offer a useful coin-in-the-slot service, the citizen will, I believe, cease to regard the computer as an alien monster or a ruthless competitor. Instead, the conversational terminal of the future will be welcomed for what it will do to enlarge daily life—as planning assistant, as budgeting assistant, and above all as a novel and challenging type of conversational companion.

Understanding Religion after the "Death of God"

William Nicholls

The radical theologians of the "death of God" will have performed an important service to the theological community if they succeed in shocking it into awareness that the time has come when it is no longer possible to ignore an event long since noted by artists and philosophers. The "death of God" was proclaimed even before Nietzsche, by Jean Paul in his *Siebenkäs*, and by the young Hegel in his 1802 article, *Glauben und Wissen*.¹ Among theologians, the radicals were preceded by Tillich, though his profound treatment of the experience of the "death of God" in *The Courage to Be* attracted much less attention than their less qualified assertions. To this extent Tillich is the father of "radical theology". At any rate, from the point of view of this modern consciousness, the radicals are not innovators but late-comers. Their merit is to have suggested way in which theology might at last take account of what the world has long known, that the traditional God of Christendom is dead.

But what does this language mean? Do they contend that God, literally, was once alive and is now dead? If so, and it certainly sometimes seems so, many of their readers will be in trouble. It would be better to start, at least, in the place where another radical, Richard L. Rubenstein, does, with the human perception reported by the artists and philosophers, and now also by many devout Christian believers, that God is altogether absent from our experience. In his *After Auschwitz* (Indianapolis: Bobbs-Merrill, 1966) and now in his *The Religious Imagination*, Rubenstein treats the themes of radical theology from a Jewish point of view. Like Thomas Merton in the December, 1967, number of *Theoria to Theory*, Rubenstein criticizes Thomas Altizer and William Hamilton, the young American theologians who have taken their stand on the death of God, for unwarranted optimism about man. He also parts company with them when they welcome the death of God as a liberating event. For him it is something to be accepted

¹ For a translation of part of Jean Paul's vision, see R. Gregor Smith, *Secular Christianity* (London: Collins, 1966) pp. 161 ff. Gregor Smith also offers a translation of the key sentence of Hegel's article (pp. 159 f). See also Karl Löwith, *From Hegel to Nietzsche*, pp. 330 ff.

only with sadness and even bitterness. In my opinion, the most serious criticism to which radical theology may be open is that it takes the world too much at its own valuation, and to this extent fails to be genuinely radical. On the other hand, I am not sure that Merton and Rubenstein have correctly understood Altizer and Hamilton, and the former at least appears to me not sufficiently to differentiate their position from that of the secular theologians such as Harvey Cox, whose *The Secular City* has had almost as powerful an impact in North America as *Honest to God* has in Britain. Though Hamilton in one article explicitly lapses into the optimism here criticized, I do not find it in his work as a whole, still less in that of Altizer. The latter's apocalyptic exultation in the liberation brought by the death of God is clearly preceded by recognition of the darkness and evil which characterized our time. (See not only *The Gospel of Christian Atheism*, now available in Britain, but also the earlier book, *Mircea Eliade and the Dialectic of the Sacred*, and his articles, in particular "America and the Future of Theology", reproduced in the collection of journal articles by himself and Hamilton, *Radical Theology and the Death Of God*, published in the United States by Bobbs-Merrill, and soon to be available in Britain from Pelican.²)

When the work of Rubenstein is set against that of Altizer and Hamilton, and all of these against Cox and the other secular theologians, it is plain that radical theology is united more by its questions than by its answers. The charge of excessive optimism, which I have conceded would be serious if it were true, does not lie equally against the hard and the soft radicals. Even among the hard radicals, it is possible to affirm the death of God pessimistically, as Rubenstein does, as well as relatively optimistically, like Hamilton. Optimism cannot be taken as the distinguishing characteristic of those who set out to take the death of God with theological seriousness. The real significance of the work of these writers lies elsewhere. Their critics must do more than show that they may be more optimistic than is justified. They must enquire whether the problem attacked by the radicals is real, and if so, whether the answers they have begun to offer are sufficient. If the problem turns out to be real, as I myself think, the only effective criticism would be to tackle it oneself, and offer better answers than they have, supposing one finds theirs inadequate.

In the present article I want to suggest that the problem of the

² For my own interpretation of the work of the radicals, the reader may be referred to my article in *The Modern Churchman* for April, 1967.

death of God requires not only considerable revision of the positions which have dominated contemporary theology, but even a new way of doing theology. What I can offer at present is only a sketch (a set of "partly baked ideas") of how I would wish to tackle the problems I can see. I should want to begin at a point already noted, with the ambiguity of language about the death of God. Altizer and Hamilton are clear that they mean "death" in the sense that the God we have known in Christian tradition has departed for good, and will not return in recognizable form. But they are less clear on whether they are referring to human experience, as Rubenstein is, or to "metaphysical events" (if there are such things) underlying man's experience of God's death. For reasons that will, I think, become clear later, I wish to confine myself to human experience and thought, laying aside provisionally the question of conclusions to a metaphysical cause for these experiences. This will help to clear up the ambiguity inherent in the expression, "death of God", and possibly lead us to drop it in any case. In fact, I think we shall find that the erosion of successive elements in a complex idea will better convey what has happened than the emotionally charged language of Nietzsche and the radical theologians, though this is not to deny that emotion is appropriate to such events. The idea of God has historically unified a number of elements that can also exist separately. In modern times these elements have successively come under attack or lost their power to hold us, so that over the last one hundred and fifty odd years "God" has come to mean less and less, until the time has come when too little is left to justify the use of the same term as in the past. Whether or not the idea of God corresponds to a reality, the idea is dead, or virtually so.

In my opinion the origins of the idea of God lie in the prehistory of the development of religion, and are unlikely to be recovered. The idea has constantly been purified by prophets, mystics and philosophers, including sceptical philosophers, and assumed classical form in the West for Jews, Moslems and Christians alike during the mediaeval period. The idea of God was inherited from ancient tradition through religious institutions, and provided the inevitable focus for a range of ideas and experiences of a religious and metaphysical type. Finally, the idea of God came to mean a single, unique and transcendent person, the creator, sustainer and redeemer of the world. Belief in God thus solved scientific problems about the origin and destiny of the world, and personal problems about the meaning of human life, and of the history within which the life of the individual is set. "God" focused all meaning and

explanation to a single point. The stress laid by monotheists on the unity of God served to establish the unity and coherence of all experience open to man, and thus gave considerable security, of a kind seldom experienced by contemporary people.

The existence of God has always been questioned by sceptics and doubters, including doubting believers. What is called the death of God is not the same as doubt or scepticism. As an experience, it is the perception that in our culture, the idea of God has ceased to play the role it once did. In that case, it will no longer be authentic to use the idea of God to explain the world or to give meaning to personal life. In this sense, God is absent from our experience. When we have experiences that people formerly explained by using the idea of God, we no longer explain them in that way. If we wish to discuss the origins of the universe, we go to the cosmologists, not to religious literature describing the actions of a creator. If we wish to govern our lives morally, we do not ask about a divine lawgiver, we pay attention to our own moral insight. Religious tradition may help us to understand the specific application of our sense of being under moral obligation, but it is not required to explain its existence or to furnish it with content : in the broadest sense, almost everyone is aware that he ought to live justly or even lovingly. Even if religion was the origin, historically speaking, of our moral insights, they can now stand on their own feet. They do not entail the existence of a divine lawgiver.

The insight that we do not need a transcendent person to explain the universe or validate our sense of being under moral obligation coincides with the philosophical criticism of the idea of a transcendent person as such. The sceptical empiricism of Hume dealt a mortal blow to the notion of God as the cause of the world. If the notion of causality is dubious even within the chain of events in the world, how much more so if the chain is extended, in one sense or another, outside the world? The critical philosophy of Kant made it seem impossible that we can have rational knowledge of any metaphysical entities, even though they may exist. Possibly Hume and Kant, in their criticism of the existing theism, or natural theology, demolished only the arguments of a decadent scholasticism in alliance with the driest of deistic rationalism, and it may be that their arguments do not have the same force against, for example, the genuine thought of Aquinas. It may be so, but we are talking about cultural events, not necessarily about the way things are in reality, and the fact is that Hume and Kant have influenced our understanding of thought and reality in ways that Aquinas has ceased to do, except for a very small minority. Since the beginning

of the nineteenth century, the metaphysical foundations for the idea of God have been missing.

The theologians were not slow to observe what had happened. A few years after Kant published his own work on religion within the limits of pure reason, the father of modern theology, Schleiermacher, produced his *Speeches on Religion*, addressed to the cultivated among its despisers. Both Hume and Kant, each in their own way, had asserted that their metaphysical scepticism cleared the way for faith. The theologians since Schleiermacher have in one way or another accepted that view, and tried to produce a doctrine of God that rested on religious instead of philosophical ground. If they continued to maintain that God was the creator, they also asserted that this contention came into no conflict with anything that science might tell us about how creation actually took place. The meaning of their doctrine of creation must be sought in the religious sphere, and added nothing to our stock of information about reality. To do this was now the exclusive task of science. Schleiermacher, with clearer insight than many of his successors, tried to show in his *Speeches* that religion is *sui generis*. It is neither rational philosophy nor morality, though it naturally issues in both thought and action. In itself it is a feeling or intuition of our relation to our total environment, a sense or taste of the infinite, almost mystical in quality. Later, in his systematic theology, *The Christian Faith*, he identified religion, or piety, more specifically with a feeling of absolute dependence, contrasted with the relative dependence that we feel towards what does not totally determine our existence. Thus, though God is not given in the sense of being either a perceptible fact or an inference from such experienced facts, in another sense (and the sense of the word "given" seems to change within the same paragraph) he is given "in an original way" to our experience, i.e. to our specifically religious experience. Since the origins of the idea of God do not for Schleiermacher lie in philosophical speculation, and ought not to, he asserts that the God who is the "whence" of our existence, as known to us in the feeling of absolute dependence, need not be thought of as a Supreme Being.

Ever since Schleiermacher, the leading tradition in modern theology has worked with a non-metaphysical idea of God. Contemporary theologians, led by Barth and his colleagues, have gone even further, and denied that religion can offer any ground for the thought of God. They have continued to use the philosophical idea of God as a transcendent person, but they have claimed to derive it reliably from the Bible and the sermon in church, instead

of unreliably from bad metaphysical arguments. Barth and his colleagues thus reversed the direction of thought which had characterized modern theology since Schleiermacher. Instead of starting from religion as given, and reaching God through their analysis of religion, they tried to bring to an end the domestication and acculturation of God which had resulted, in their opinion, from the nineteenth century approach. Barth began, in a way which is somewhat recalled by writings of the contemporary radicals, by trying to render God non-obvious. He launched a violent attack upon religion, and tried to bar permanently any route from religious experience to God. At first, with the aid of some of Kierkegaard's ideas, he conceived God as the wholly other, the limit which all human thought and actions runs up against at the last, the one who is hidden by death and the void, which are still not himself. In neo-Kantian fashion, he tried to do without a rational doctrine of God as an object of knowledge, and to assert that faith is not knowledge, but the acknowledgement of God's knowledge of us. Later, he turned to a more positive structure of thought, with the aid of his studies of Anselm, and asserted that God is the one who makes himself known to man in his Word, Jesus Christ, as witnessed to in the Scriptures and in the church's proclamation, and thus paradoxically and even miraculously becomes for faith an object of rational human knowledge, without ceasing to be indissolubly Subject.

Both the early Barth, and the later Barth of the Church Dogmatics, attack religion root and branch, but cannot do without it. The early Barth simply substitutes the religion of Kierkegaard, with its dramatic, dialectical and rhetorical tone, for the romantic sweetness of Schleiermacher's own. The later Barth, doing without both, substitutes the religion of the Protestant preaching service, in which God's Word is proclaimed to an attentive congregation. Hence, having in his criticism of religion excluded, even "abolished" it in the name of God's self-revelation, as unbelief and self-righteousness, he is compelled to restore it in the notion of the true religion, which is "assumed" by grace into unity with the Word of God. This seems to be a sort of idealized Protestantism, which (unlike the empirical one) actually lives by grace alone.

The criticism of religion, begun by Barth, was carried on by Dietrich Bonhoeffer, who was hanged by the Nazis in 1945 at the age of 39, with his work incomplete. In his prison letters he takes the ideas of Barth much further. Barth criticizes the use made of religion by nineteenth-century theologians, Bonhoeffer the use made of it by the theologians of nineteen centuries. He sees religion as not so much unbelief, with Barth, as simply a cultural garment,

worn by Christianity during its history until now, when it is rapidly going out of style, or becoming worn out. If the garment is no longer available, because men simply are not religious any more, Christianity must go naked into the world. It will be none the worse for that, since it will no longer be possible to appeal to the "last survivors of the age of chivalry", the men who are still religious, but to authentically contemporary people. The church will have to learn to speak of God in worldly fashion. When it does so, Christ will be acknowledged by men living in the world without religious privilege, and so he will be in actuality what the Bible proclaims him to be, the Lord of the world. But Bonhoeffer had only the beginnings of a solution to the problem of how to speak of God in worldly fashion, and his present-day followers do not seem to have got beyond the point where he stopped.

Nevertheless, Bonhoeffer began from within the church the criticism of the God of Christendom, and he did not pull his punches. The God of religion is a mere *deus ex machina*, who comes when we call him, to meet our need. But his readiness to do so proves that he is not the real God, who forsook Christ on the cross. The real God is not the one who comes when he is called, but the absent God, who is not given, who is never at our disposal, who invites us to share his own sufferings at the hands of a godless world. This God is not intelligible to us in either religious or worldly terms, though there is perhaps more chance of his becoming so in worldly ones. Bonhoeffer retains a firm conviction that the idea of God refers to a reality, to which the Bible bears witness, but he looks forward to drastic alteration in the idea. Meanwhile, God is to be acknowledged and worshipped, but in secret, within the community, and until the doctrine of God is reinterpreted in the appropriate worldly terms, must not form the subject of proclamation or verbal witness. Perhaps it will be possible, however, to witness to God otherwise than in words, through sharing in the life of Christ as the man for others. From this combination of secret worship with witness in acts of love for others, reinterpretation may come.

The radicals are themselves descendants of Bonhoeffer in so far as they grasp, with him, that the criticism of religion originated by Barth must not stop short of the criticism of God. But the hard radicals abandon Bonhoeffer's "discipline of secrecy" about God, and the patient endeavour to reinterpret, asserting that God has gone, along with religion. Even so, there is enough of the mystic in both Hamilton and Altizer for their assertion of divine absence to

sound at times, as Merton notes, like a covert acknowledgement of an unnamable God. The radicals of the death of God assert that the process of erosion has reached a terminus. If God is not the creator or the source of morals, nor a very present help in time of trouble, it does not make sense to speak of him any more. Rubenstein adds his distinctive contribution, when he asserts that the God of history, retained by contemporary theologians, Jewish and Christian, long after they had abandoned a metaphysical God, also died at Auschwitz. To assert in the face of the extermination camps the old doctrine, stemming from the book of Deuteronomy, that God rewards the good and punishes the guilty in history, is intolerable. Rubenstein seems to equate the Deuteronomic theory, attacked by Jesus, it seems, as well as by the author of the book of Job, with the idea of a God operating more broadly in sacred history in the choice of Israel and oversight of her historical existence. But he might well have said that our view of history, as well as the happenings of Auschwitz, makes the idea of election and salvation in history immensely hard to hold without doubleness of mind. So although Rubenstein does not abandon the idea of God altogether, preferring to speak of him as the mystical Nothingness from which everything came and to which it will return, he is very close to the Christian radicals. Each makes his own refusal in his own way, in the name of total honesty in the face of personal, cultural and historical experience.

In my own view, the radicals have not, at any rate so far, solved the basic problems of modern theology, that have been with us since Schleiermacher's day. But they have tolled the bell for neo-orthodoxy, the second great phase of the modern tradition in theology, and in particular for its non-metaphysical God, who appears only in the Word of the Protestant preaching service, and not in the world where men live. Just as the appearance of the early work of Barth indicated the end of the previous, liberal phase, though many of its contributions would be assimilated by the great men of the neo-orthodox period, their work is the signal for the beginning of a new, third phase in modern theology, that will learn from both its predecessors. As we have seen, the problem of religion dominated modern theology, first positively, then negatively. The followers of Bonhoeffer have concluded that the problem now facing us is to learn how to speak of God in an age radically without religion. In my opinion, they (or perhaps it would be more honest to say "we") have failed. I suspect that the reason is that Bonhoeffer's way of putting things brings thought to a halt on the place where he himself stopped. It does not lead forward into new

solutions. I agree with Rubenstein that the problem is rather "how we speak of religion in a time of the death of God". I would add that if the idea of religion is to remain central in theology, it must now function neither apologetically nor (in reaction) negatively, but simply descriptively.

The nineteenth-century theologians, confronted with the problem of finding a new starting point for theology in a critical and scientific age found it in religion. They saw religion as a universal human premise or a priori, in which experience could be given meaningful structure. On this foundation they placed the historical Jesus, as brought to light by critical scholarship. Christianity became the religion of Jesus, as the highest religion, or even the essence of religion. Thus they rendered their interpretation of Christianity intelligible in the academic world, and brought about a great body of fruitful scholarship, mostly historical, among with some brilliant if untraditional systematic theology. Barth and his friends did not deny the scholarship, but they contended that the penalty had been too heavy. In the process, the Gospel had been acculturated to the world of the nineteenth-century liberal intellectual. It had ceased to be the good news of grace, but had become a patina upon man's religious culture and ethical endeavours. So Barth tried to recover what he conceived to be the substance of the Gospel, as grace against works, revelation against religion. He concluded that religion was no way to God, and that God could only be known through his own self-disclosure. He refused to engage in any apologetic defence of the faith, and took his stand radically upon God's own power to make himself evident to faith through the Word. But in a culture which had no authentic language for God, such a brave attempt seemed to involve, as Bonhoeffer said, flinging unsupported assertions at men, who cannot understand what they mean, since their interpretation is also left to God, and since nothing seems to count for or against them. Man must take it or leave it. On the whole, it seems that he will leave it.

In the broadest terms, we may conclude that in the modern discussion of religion, the nineteenth-century theologians were more preoccupied with intelligibility, while the twentieth century writers are above all concerned with re-assertion of the substance of the Gospel, conceived in neo-Reformation terms as grace proclaimed in the Word. In the latest phase of neo-orthodoxy, in Bonhoeffer, and also in their different ways in Bultmann and Tillich, we see the first attempts to combine their concerns. But these men stand firmly in a theological tradition going back to Schleiermacher, rudely shaken as it was by Barth, and they presuppose a great deal

that contemporary man cannot. Without such presuppositions, he is cut off from hearing, as well as understanding, the Gospel. Even the contemporary radicals seem to inherit many of the questions, if fewer of the answers, of modern theology, including its Protestant character.

Among the less intelligible elements in twentieth century theology is its criticism of religion. To criticize the apologetic use made of the idea of religion by nineteenth-century theologians is one thing. To work with a definition of religion so loaded that it excludes authentic Christianity from the sphere of religion is another, and harder to accept. Whatever else Bonhoeffer's projected "non-religious Christianity" would have turned out to be, it would surely have been religion, as the word is normally used in an academic context. In the discipline of the study of religion, one cannot give normative definitions of religion from the standpoint of a particular view of the questions that arise in its practice. One must use the term descriptively, to indicate what appears to be going on in the area one is studying. Neither nineteenth nor twentieth century theologians seem to do this, but the followers of Barth and Bonhoeffer are furthest from doing so. I should be inclined to recognize as religious a practice or discipline, with its associated system of thought, which offers a negative criticism of man's given experience of himself in relation to his environment, in the name of some more ultimate reality which is affirmed; religion is concerned with bringing about the transition from the one to the other. This is a very broad view of religion, intended to be applicable to non-theistic traditions as well as to the Judaeo-Christian tradition up to the present. It is not normative but descriptive. It stands or falls by its applicability to the material, not by its acceptability to the thought of a particular religion. That activities such as this description points to are still going on, even after "the death of God", seems too obvious to be worth arguing.

My own account of Christianity would have to start by showing that religion in this sense includes the activities of Christians today. I should want to go on to describe these activities in greater detail and with more precision, and to see which of them are of central importance, judged both by the classical literature of Christianity and by contemporary developments, which display continuity with the past, albeit in a form appropriate to a new cultural environment. Could such a descriptive approach be useful in relation to the problem of the "death of God"? One aspect of religion which its academic students often seize on as of central importance is mysticism. In the article in the *Modern Churchman* referred to

above (Note 2), I suggested that the experience of the death of God could be given a mystical interpretation, and linked with the striking resurgence of the mystical view of God even at the popular level. Since I wrote, this has become even more evident. The Beatles in their latest work, and their devotion to the transcendental meditation of the Maharishi Mahesh Yogi, are only one among many examples of what is going on, particularly among younger people. The mysticism which in its popular form appeals to them is fairly non-theistic in character, and when the word "God" appears in its literature, the transcendent person of traditional Western religion is not meant. Can an analysis of mysticism afford a clear meaning for "God", when so many of his other functions have been eroded?

Such a project, and the sources which its pursuit would involve one in studying, appear to have considerable appeal for the supporters of *Theoria to Theory*. However, I have myself had second thoughts. I do not wish to decry mystical experience, or mysticism, in the slightest. On the contrary, I am personally convinced that there is authentic mystical experience, and think I know people who have had it, in one form or another, and there are many. My difficulty is that I have not been convinced that the idea of God is simply *given* in the mystical experience. Every mystic insists that what happened to him cannot be conveyed in words, but only hinted at, in such a way that others who have similar experiences may recognize what is meant. But when a mystic tells us that he has had a vision of, or been united with God, or discovered his and all men's unity with God, it is hard to know whether he is telling us something that was part of his ineffable experience, or explaining it in categories already available in his own religious and intellectual tradition. Also, it is hard to know how much significance to attach to variations in interpretation. Should we conclude, with many students of the field, that there is essentially one kind of mystical experience, variously explained, or with such a scholar as R. C. Zaehner of Oxford that there are several different kinds? In particular, are mystical experiences which are explained theistically by those who have them altogether different from those which are not? I do not see how the question can be resolved. In short, I don't think the study of mysticism, however valuable for its own sake, is going to give us much help with the problem of the death of God. It is precisely those elements in the idea of God which have already been eroded that would be needed for us to make a clear identification of mystical experience with experience of God. God must be given to us from elsewhere, if we are to conclude that a

given experience is an experience of God. Again, the loss of metaphysics is crucial.

My next step, therefore, will be to relegate the problem of God to the background for the time being. Let us regard the idea of God as an explanation of something else, and then see what it has explained, and if there is anything left of what traditionally it did explain which has not received some other and culturally more effective explanation. Our descriptive approach will lead us to concentrate in the first instance on the phenomena of religion. We are aware that these phenomena are variously explained by religious thinkers, philosophers and scientists, but we shall suspend these explanations provisionally, placing all of them in parentheses while we direct our full attention to the phenomena themselves, in the interests of accurate description. When we have secured our description, we can return to the level of explanation, and adopt, if there is good reason to do so, either one of the traditional explanations, or a new one. This method, which some readers will recognize as that of the "phenomenology" of Husserl and his followers, now gaining ground rapidly among theologians and students of religion, may permit us to study whatever is going on in religion, without compelling us to adopt explanations which are inadequate to the phenomena as they appear. One of the greatest problems in the study of religion is how to avoid such "reductionist" explanations, which say in effect that religion can perfectly well be explained, provided we understand that the religious person does not know what he is talking about, and does not experience what he says he experiences. To begin with the description of what appears to experience, or of pure "phenomena", and to refrain from moving on to explanation until a description is available that can be verified by reference to accounts of the experience in the literature, will help us to avoid such reductionism, which has plagued our study, as well as the dogmatism that is often thought by laymen to be more characteristic of it.

Our descriptive or "phenomenological" method will be used to identify various structures within religion. A great many of these have already been described by this method, as can be seen by consulting van der Leeuw's pioneering book, *Religion in Essence and Manifestation*. I want to suggest that the defects of nineteenth-century theology are best overcome, not by abandoning its quest for intelligibility, but by using such methods as are now at our disposal to render intelligible what a twentieth-century theologian would recognize as the "substance of the Gospel". But the defects of twentieth-century theology cannot be overcome without calling in

question even more of the traditional structure of theology than either nineteenth- or twentieth-century theologians have been willing to do. Taking seriously the unavailability of "God" as a starting point is here crucial. Our descriptive method must be combined with the right choice of structures to describe. Thus the key to progress with these problems will be found when we have the right starting point combined with the right method.

My own proposal is to start with the phenomenological description of what I shall call "liberation". "Liberation" suggests such experiences as are referred to in terms like "salvation", "grace", "conversion", "enlightenment" and so on. As such, it is clearly a central concern and experience in most religions. If I prefer the term "liberation" to its alternatives, it is because the word is not peculiar to the vocabulary of religion, and does not suggest an experience so esoteric that only a few people have ever had it. I do not imply, however, that "liberation" will do as a definition of religion, if only because no satisfactory definition has ever been offered, and also because a great deal of the activity of religious people, especially in their institutions, is devoted to ends that it requires some ingenuity to recognize as liberating. It is not accidental that the (quite probably false) etymology of *religio* as "binding" has been so popular. It is also important to my proposal that many movements which are non-religious or hostile to religion have been intensely concerned with liberation.

What I wish to examine is not theories of liberation, though these are naturally useful sources for my enquiry, but the phenomenon of liberation itself, as it presents itself in the experience of the religious man in the various traditions. It seems to me that the founders of great religions, or the most important figures in religions that lack founders, were centrally interested in liberation, were themselves liberated, and sought to liberate their followers. The differences between religions lie in different understandings of liberation, differences in the diagnosis of that frustration, suffering or discontent with the given human condition that causes men to seek liberation, in the means recommended to bring about liberation itself, and in the description of the liberated state. They do not lie in the possibility that some religions are interested in liberation while others are interested in something else, though I grant that interest in liberation is of greater relative importance in some religions than in others.

It will at once be obvious that liberation can mean a great variety of different things, inside and outside religious traditions. I want to concentrate upon what I shall call the *structure* of liberation, which I hope to be able to show is present in all types of liberation. The

form or structure of liberation is the same, or at least bears a family resemblance, in the many different liberation experiences : it is the content that differs. Different cultural situations produce different contents, and this happens both within the history of a single tradition and as between the different traditions. Thus, in Christianity, liberation receives various understandings even within the New Testament writers, including forgiveness of sins, rebirth, enlightenment, receiving eternal life, death and resurrection, knowing the truth. The early church largely conceived it as the gift of immortality, overcoming death and conferring deification. The mediaeval and Reformation churches were more preoccupied with moral evil and the guilt engendered by it. Contemporary Christians have been interested in estrangement and reconciliation. The history of Hinduism and Buddhism evinces similar cultural changes. It might be possible to show that in spite of such changes, there is a single continuous and distinctive understanding of liberation in each tradition, which differentiates them from one another, over and above the obvious differences of content. Again, it would be easy to show that there are degrees of liberation. All liberations are liberating, but some liberations are more liberating than others.

In all liberations, an initial binding or frustration is experienced as painful. People hope that man was meant for better things, and enter upon a quest for liberation. According to their diagnosis of what is wrong with the human condition, they are likely to undertake various kinds of self-discipline, including moral purification, social action, prayer and meditation, as well as the study of liberation-theories within their tradition. Though this discipline, which can be extremely arduous, in itself produces a certain degree of liberation, as all discipline does, if assented to, it does not produced the result hoped for. Indeed, by bringing about greater self-knowledge, it often diminishes the hope for liberation with which the quest was begun. There are often periods of great darkness and renewed frustration, in which the seeker would give up if it were not for the conviction that others have won through and found liberation. The experience of liberation itself frequently comes suddenly, as a break-through into a new state of freedom. It seems that the liberated state is discontinuous with the period of discipline into which it broke, so much so that it often seems that the discipline was a *conditio sine qua non*, rather than a cause, of the liberation that followed upon it. The state of freedom which results from liberation is often described, or referred to, as for instance in many forms of Buddhism, in such a way as to imply that it cannot be understood from a pre-liberation standpoint. This makes any

attempt to offer an account of it peculiarly hazardous, but if I am right in thinking that there is close structural resemblance between all forms of liberation, we can use lesser experiences (and most people have some of these) to interpret greater ones.

There seems to be a convergence of theories of liberation in the great religions upon the notion that liberation involves an alteration in our experience of the self in relation to what is not the self. Jesus speaks of denying the self, Paul of death and resurrection (presumably of the self), Hinduism of self-realization (meaning coming to understand existentially, not just theoretically, that our own self is not other than the Self underlying all phenomena), Buddhism either of *anatman*, (the realization that there is no substantial self), or discovery of one's true original self. In every case liberation is understood to involve a total change in self-understanding, a renunciation of our grasp upon the empirical self, a loss of ego. This, as the Christian language suggests, is very like dying, and is naturally feared and resisted. But the Christian tradition is at one with the others in supposing that when this dying is accomplished, it leads to being more intensely alive than is possible in any other way.

Many of the paradoxes of the liberation experience come from its paradoxical treatment of the self. Can one liberate oneself by anything that the self does? Discipline is very likely to enhance, not dissolve, the self. But not being disciplined can have the same effect, or worse. The ego cannot by any operation performed by itself upon itself dissolve itself. This is why the discipline undertaken initially increases frustration, and why so many religious people seem to get stuck in a barren discipline for discipline's sake. The human greatness of Jesus and Buddha (leaving aside any traditional theories as to who they were) is clear in the skill with which they deal with this central problem. Both suggest that the effort after liberation must be violent and totally committed, and also that it must at an appropriate moment be radically given up. Thus, among their followers some have stressed the discipline, and others its radical and sudden abandonment in despair at one's capacity to liberate oneself. The most ardent seekers of liberation have been ascetics or monks, but Jesus and Buddha cannot be fitted into this category. Buddha did not receive enlightenment until, having fasted nearly to a skeleton, he gave up his asceticism (to the scandal of his disciples) and took food again. Jesus, in contrast to the ascetic John the Baptist, could plausibly be accused of drinking and a fondness for parties in bad company; but he frequently spent whole nights in prayer. Buddha and Jesus both teach a middle

way (though the phrase is Buddhist) in which the self is hardened neither by indulgence of the passions nor by extreme asceticism. Hence, precisely, the gate is strait, the way narrow, and few find it, not because it is moralistic or narrow-minded, but because it is not. It lies between the rigour of the moralist or ascetic, and the spontaneity or self-indulgence of the romantic or pleasure-seeker.

But though liberation is found along a middle way, the definition of the way as lying in the narrow gap between two ways of hardening the self does not suffice to find it. It must still be sought with commitment and hoped for against hope. When it comes, it is experienced passively, not as the fruit of the action of looking for it. One does not liberate oneself, for reasons already given; one is *liberated*. The demanding ego drops away. Hence the language of "grace", to explain the experience of receiving passively what had been actively sought without success. Hence too the ascription, common but not universal, of liberation to a liberator, or saviour. I want to contend that an accurate description of the experience of liberation, suspending explanation, will contain the identification of this passivity as part of its essential structure, but will not necessarily point to an external liberator. We might speak of "what" liberates as given in the structure of the experience, but the quotation marks are essential. The point is that no-one can liberate himself, yet liberation does not come from some objective source outside the self (at least at this ultimate level of liberation). "What" liberates is neither subjective nor objective, in the usual sense. Liberation is often described as the overcoming of the subject-object structure, and this is true not only of the result but of the process of becoming liberated. Thus the "what" stands for the non-objective correlate of my experience of *being liberated*.

What has all this to do with the "death of God", and with the problems of rendering Christianity intelligible, without reducing it to something which is not a Gospel, when God is not available as the starting point of our interpretation? Those who insist upon "the substance of the Gospel" are saying that Christianity is essentially liberation, not ethics or piety. In relation to the traditional issues of theology they favour grace against works, Augustine against Pelagius, Athanasius against Arius. I am with them, and against the nineteenth century, in my understanding of what religion is centrally about. But the phenomenological method enables me to speak of liberation without being obliged to invoke an objective God as its source. The non-objective "source" of liberation has certainly been identified with God in the theistic traditions. If we have good reason on other grounds to speak

of God, we shall find it inevitable to regard him as the source of liberation, though even in that case careful attention to the phenomenology of liberation will safeguard us against crass objectivization of God. In times like the present, when God is not given, we may, if we choose, refrain from identifying "what" liberates with God, and remain silent on the question of the source of liberation. But I want to contend that if we make that choice, we can still be at one with Christian tradition in our understanding of the central issue of liberation, and "mean" all that those who today speak of "God" can themselves mean, if they are honest in facing, with us, the erosion of so many elements in the traditional complex that we call the idea of God.

Comment

Living as Castaways

The article about the Tongan castaways and Edward Blishen's comparison with the Lord of the Flies reminded me of another experience of a similar kind.

In the 1950s my husband and I ran a citizenship training centre in West Africa. Our students came from all over Nigeria to a very beautiful and romantic site on the coast of the Cameroons—at that time administered with Nigeria. A feature of the course, which endeavoured to make young Nigerians more aware of their own potentialities and how these could be put to the service of the community, was the climb of 13,000 ft. Mount Cameroon. Although an extremely strenuous walk rather than a climb of any great difficulty, the mountain had its own hazards. It was regarded with superstitious awe locally, and the current legends (of a half-man among other creatures) affected all our students, even if they came from sophisticated backgrounds and good secondary schools. Two students had collapsed and died in 1952—from fear. Temperature also provided unknown dangers; the cold which struck as they climbed higher was something which these young men had never experienced before and it inspired awe and sometimes terror.

In 1954 we ran a course for schoolboys and, in cloud at the very summit of the mountain, two seventeen-year-olds got lost. They left the main party, against orders, to photograph each other and to look for plant specimens. When they tried to return they could not find their way in the mist. A search was instituted but not a sign of them could be found. After two days it was abandoned. Preparations were made to presume the boys dead. Mount Cameroon covers an immense area, much of it unexplored rain forest.

Eight days later they arrived at a banana plantation at the far side of the mountain. They told a remarkable story of survival.

Some facts are interesting and relevant. The boys were from different regions of Nigeria, they were strangers to each other and to the Cameroons. Both boys came from town areas and good secondary schools and were quite unaccustomed to "jungle" living. In this way they differed markedly from the Tongans. Mt. Cameroon is the home of gorilla and elephant, with a wide variation of both climate and terrain, from bitter cold to tropical heat, from bare rocky slopes to thick forest. Because the party had spent

the previous night in a hut quite near the summit all their kit had been left there while they made the last spurt to the top. So the boys had only the clothes they stood up in, including large waterproof capes, their cameras and a packet of biscuits that one happened to have in his pocket. One boy was a Roman Catholic, the other a member of the Salvation Army.

When they discovered that they were lost and that there was to be no answer to their cries, they sat down and prayed. They also sang a hymn, which had been a favourite at assembly at the centre and began "Now as I go upon my chosen way." This done they turned out their pockets and assessed their possessions, pitifully few.

It was very cold, by now thick black cloud wrapped the mountain, which at the top has a lunar appearance, a wilderness of volcanic rock. While they were considering which way to go, the wind whipped a hole in the cloud and they saw, far below, the sea. They decided to take that as a pointer and to go down in that direction. As it turned out afterwards this led them down the uninhabited side of the mountain.

The first two days were spent on the bare uplands, sleeping at night huddled under rocks. Each evening they prayed before sleep, and again before they started off in the morning. The third day they reached the rain forest, and while this had advantages, shelter, warmer atmosphere, plenty of moisture and grass to eat, it confused entirely any sense of direction. The trees were 200 feet high and impossible to climb. They tried to follow streams, arguing that they would run to the sea, but the water disappeared underground.

They were lost on a Tuesday. They kept count of the days and on Sunday morning both agreed that they should keep a day of rest. This they did, singing hymns and praying. They were by this time very hungry and had been five days living very close to death. On the Monday, refreshed, they started off again and on Tuesday afternoon came out on to plantation land where a man was working.

This remarkable feat of endurance and discipline was due, by the boys' own stories, to two main factors. Though at absolutely opposite ends of the denominational spectrum, both boys had a genuine religious faith and believed that they would be guided to safety. Secondly, this accident happened at the climax of their training course—three weeks—and both had completely accepted the ideas of self-help, initiative and moral courage which were explicit in that training. "We said to each other that this was a crisis, and we had been taught to meet crises. We couldn't let the staff down," one of them said on return.

It is interesting and significant that prayer was also a factor in the Tongan boys' survival, adding another and beneficial dimension to a world which would otherwise have been so terrifying and so self-concentrating that it would have destroyed them. The second factor also relates closely to the adult-forming processes of which Mr Blishen speaks.

MORA DICKSON.

19 Blenheim Road, London, W.4.

Reviews

The Art of the Soluble. P. B. Medawar. *Methuen, London.*

"No scientist is admired for failing in the attempt to solve problems that lie beyond his competence. The most he can hope for is the kindly contempt earned by the Utopian politician. If politics is the art of the possible, research is surely the art of the soluble. Both are eminently practical-minded affairs".

Medawar writes as a scientist, and all the essays collected in this book are concerned with science. His own views on scientific method are largely derived from Popper, and in the last two essays (which might have been better placed at the beginning of the book) he expounds a simplified version of the hypothetico-deductive system. He repeatedly exposes popular misconceptions of scientific thought, principally the idea of science as an inductive system. One wonders how popular such misconceptions are, but if Medawar seems at times to be preaching to the converted, perhaps he should receive a good deal of the credit for effecting the conversion. However, the hypothetico-deductive system is itself a theory about how science works: it is not necessarily a psychological description of how scientists work. Medawar does not distinguish very clearly between the two. The psychological description is of course supported by well-known case histories—Kekulé and the benzene ring and so on. But it would be an illusion to think that all scientists operated in this way. Some test other people's hypotheses, and there are some who merely collect facts, at least in biology. In the suburbs of science fact-collecting is an important and widespread activity; the keyhole at which Medawar listened to find out how scientists work was a grander one than he admitted.

Armed with the hypothetico-deductive idea, common sense and his splendidly lucid style he examines scientific works and explanations. He has no mercy on obscurity of style or thought. It follows that psychoanalysis forms a ready target, and in *Darwin's Illness*—an illness which now seems likely to have been a form of trypanosomiasis which he contracted in Argentina—Medawar treats us to several most amusing pages at the expense of the “treasures of nonsense” he found in the psychoanalytic literature. In his famous review of *The Phenomenon of Man* he finds nonsense again. “There is an argument in it, to be sure—a feeble argument, abominably expressed—and this I shall expound in due course; but consider first the style, because it is the style that creates an illusion of content, and which is in part the cause as well as merely the symptom of Teilhard's alarming apocalyptic seizures”. One can hardly take exception to his assault on Teilhard's style; I find the attack on the content justifiable too. The preface to *The Phenomenon of Man* begins as follows: “If this book is to be properly understood, it must be read not as a work on metaphysics, still less as a sort of theological essay, but purely and simply as a scientific treatise”. And judged by Medawar's scientific criteria, much of the book if so taken can be properly understood only as nonsense.

Koestler is his next victim. *The Act of Creation* is convicted on the familiar grounds of style. Arguments by analogy Medawar regards as particularly suspect; inapplicable generalizations are the main flaws he finds in Koestler's arguments. In the essay on *Herbert Spencer and the Law of General Evolution* he finds them again: “It must be clear that in describing both development and phylogenetic transformation as processes of ‘evolution’ we may be making a useful statement about one or about the other; but not, I fear, about both. They are altogether different phenomena”.

In contrast to these general theorizings based on science and purportedly scientific, Medawar shows us the real thing. In *D'Arcy Thompson and Growth and Form*, which I find the best essay in the book, he writes about his hero. “There is a combination here of elegance of style with perfect, absolutely unflinching clarity, that has never to my knowledge been surpassed”. D'Arcy Thompson's theories sought to integrate biological phenomena, but never trespassed out of the bounds of natural science. “Of how it is that the soul informs the body, physical science teaches me nothing: . . . nor do I ask of physics how goodness shines in one man's face, and evil betrays itself in another”, is quoted with approval.

There is clearly a ready market for works of what Medawar calls **philosophical fiction**, usually based on biology. The flood of such **books** continues unabated—*The Territorial Imperative*, *The Naked Ape* and so on. When para- and pseudo-science are passed off as **the** genuine article they deserve to be attacked on their chosen **ground**. Where the biology leaves off and the arguments by analogy **begin** is usually fairly clear, but it becomes clearer when one **imagines** what Medawar would make of them. He speaks for **scientific orthodoxy** more articulately than anyone else. And he **writes** very well indeed.

RUPERT SHELDRAKE

Thoughts on Reading McLuhan.

Understanding Media: The Extensions of Man, by Marshall McLuhan. Routledge and Kegan Paul. pp. 359. 42s.

It seems to me that the wording of the analogy which McLuhan sees between the planet's civilization of the immediate future and the primitive tribe is the clue to where he has gone wrong despite the fact that he says a lot of right things. He points out that, unlike our recent "Gutenberg" society (i.e. a literary culture which might be said to use the Encyclopedia Britannica as a guide), the tribe had a tribal memory which served as a guide. He then in effect deifies this memory, because he identifies tribal memory with myths, which seems wrong. I think actual myth or mystical experience lay behind tribal consciousness. But when he says the student today lives mythically and in depth, because of the extension of communications all over the world due to the electronic environment, he is misusing the word "myth", because he has arbitrarily connected the idea of myth to the idea of environment from misconceiving the tribal environment as myth, neglecting the fact that actually both tribal memory and modern environment *spring* from myth, which is a different circumstance.

Likewise he is misusing the word icon. He uses the words image and icon interchangeably. He speaks of the Russian girl in orbit as an icon. But he also appears to consider the collective countenance of a civilization to be an icon. If this is what he means he is getting closer to the truth because the countenance of a civilization might well be supposed to derive from collective mystical experience. Then he again uses "icon" and "image building" as synonymous but without ever really thinking about what lies behind a true icon. He is debasing the word icon so that it represents

“man” rather than “God”. Probably all this is because the idea of “the Holy” as in any way “other”, i.e. as the foundation of mystical experience, is an impossible one for him. So in effect he describes the particular environment in a way which I think is quite unjustifiable, though it would not be wrong perhaps to say that all the environment, past and present, was and is an icon of God.

Using words in this topsy turvy way, his reasoning leads to the idea that the electronic environment is now an icon involving pattern recognition. He says, quite correctly, that the environment is an extension of man, but neglects the fact that man in all societies, even if unconsciously as in modern society, is dependent on inner mental experiences out of which he forges his environment. Then to be sure, as McLuhan argues, there is feedback from the environment, but let's not make a god out of the environment which is what he seemingly does. Thus I think these misconceptions must be kept in mind in interpreting his work.

He points out, correctly I think, that the outmoded environment becomes an art form, but again, because of his lack of any real theistic or non-theistic hypothesis, he fails to discuss the basic relation between art and basic truth or God and therefore fails to see art as a true icon. To be sure he speaks of his own faith in the ultimate harmony of all being but never allows himself to spell out what this means.

It then becomes apparent that he wishes to substitute pattern discernment for cause and effect kind of thinking which he claims stems only from the lineal quality of print and talk. There is perhaps something to this but I would say that there are simply two different ways of translating perception, both equally valid. The fact that the new environment will lead us to think non-causally does not mean we should consider this to be the entire good and give up the capacity for causal thinking.

I am glad to see that, despite his deification of environment, he does realize it is a threat when he comes to discuss the effects of media. However once again he falls into the confusion of speaking of the different media as icons and thinks of them as substitutes for God. By none of this do I mean to imply that he is wrong about the effects of different kinds of media, both “hot” and “cold”. (A “hot” medium is one in which only a little, a “cool” medium one in which much, has to be filled in by participation from the audience).

Basically McLuhan likes his art “cool” so that he, as spectator, can fill in the spaces. But it is perfectly tenable to like it hot, packed with a cause and effect story line. For example I like my intellectual environment “hot” probably because I then supplement this

with the "cool" of inner mystical experience where I can fill in the spaces, but McLuhan appears debarred from doing this.

He infers, correctly I think, that once you recognize the media as extensions of ourselves they will lose their fascination just as the image of Narcissus would have lost its fascination when recognized as such. But, granted this would happen, at what altar would McLuhan then have us worship? He seems to foresee something like Teilhard's noosphere, a totally interdependent planet, but it certainly does not come in "loud and clear". There is a lot of meat in his stuff but it is not well "cooked" because he likes to dish it up "cool" with lots of blanks.

In discussing the dangers of the future and our need for immunity to our new extensions he feels art may provide this by warning us. He then defines the artist as any man in the sciences or humanities who grasps the implication of his action and of new knowledge in his own time, the man of integral awareness. This is just fine and dandy, but what leads the artist to integral awareness if not mystical experience? And with this McLuhan never comes to grips.

Despite all my reservations it nevertheless seems that the public acceptance of his work in a sense proves many of his points. To be sure his work is not well "cooked" in a logical manner and as a result cannot be accepted on the basis of our sequential way of thinking, yet the public acceptance of his "cool" presentation proves his idea that the medium rather than the content is what immediately counts.

Near the end of *Understanding Media* he says "Let us, as the Chinese say, move our chairs close to the fire and see what we are saying". I only wish he had done so before he wrote the book but he doesn't really feel it's necessary and I only hope he's wrong.

All of his thinking seems to lead up to the idea that man should substitute roles for goals. To me this would spell disaster, but it is the natural result of atheism, and the impact of his book is atheistic. However let's see where this idea leads him. He claims that automation will free all men for roles, and then proceeds to say the role will be that of the autonomous artist, so don't panic. But just what will be the role of the autonomous artist? It seems to me that the only real role left will be, in Tillich's words, to live as a part of God. In other words, man may become so free from the necessity for employment that contemplation and heightened mystical participation in the mind of God will be his role. However McLuhan could not permit himself to see it this way, and therefore, despite the validity of a lot of what he says, he is having a terribly misleading effect.

MICHAEL HARE

SENTENCES

From "The Litany". John Donne.

*From being anxious, or secure,
Dead clods of sadness, or light squibs of mirth,
From thinking that great courts immure
All, or no happiness, or that this earth
Is only for our prison fram'd
Or that thou art covetous
To them whom thou lovest, or that they are maim'd
From reaching this world's sweet, who seek thee thus,
With all their might, Good Lord deliver us.*

*From needing danger to be good,
From owing thee yesterday's tears today,
From trusting so much to thy blood,
That in that hope we wound our soul away,
From bribing thee with alms, to excuse
Some sin more burdensome,
From light affecting, in religion, news,
From thinking us all soul, neglecting thus
Our mutual duties, Lord deliver us.*

*From tempting Satan to tempt us
By our connivence, or slack company,
From measuring ill by vicious,
Neglecting to choke sin's spawn, Vanity,
From indiscreet humility,
Which might be scandalous,
And cast reproach on Christianity,
From being spies, or to spies pervious,
From thirst, or scorn, of fame, deliver us.*

* * * * *

*That we may change to evenness
This intermitting aguish piety;
That snatching cramps of wickedness
And apoplexies of fast sin, may die;
That music of thy promises,
Not threats in thunder may
Awaken us to our just offices;
What in thy book thou dost, or creatures say,
That we may hear, Lord hear us when we pray.*

NOTES ON CONTRIBUTORS

Roy Sawh was born in Guyana and came to London to pursue a course in insurance. He is an accountant by profession. Chairman of the Universal Coloured People and Arab Association (Black Power). Has travelled widely, and spends most of his time in Immigrant Welfare work. Lectures frequently in universities and appears on television. Was arrested on the Race Relation Act, 1965, and was fined £120.

Michael Dummett is Fellow of All Souls' College, and Reader in the Philosophy of Mathematics in the University of Oxford. Member of the Congress on Racial Equality, California. Former Chairman, Oxford Committee for Racial Integration. Member of the National Council of C.A.R.D. and its executive committee, 1966-1967. Vice-chairman, Joint Council for the Welfare of Immigrants.

C. H. Waddington, F.R.S. took the Geology Tripos at Cambridge in 1927 and began research on the evolution of ammonites. He then held the Arnold Gerstenberg Studentship in Philosophy. From about 1930 onwards his main work has been in experimental embryology in genetics. Amongst his books are *Organizers and Genes*, 1940; *The Strategy of the Genes*, 1957; *The Nature of Life*, 1961 and *New Patterns in Genetics and Development*, 1962.

Margaret Masterman studied French language and literature at the University of Paris and Modern Languages and Moral Science at Newnham College. She is the Director of Research at the Cambridge Language Research Unit, a Director of Studies in Moral Science, and has been a lecturer for the Moral Science Faculty on philosophy of language. She is also the Vice-President of Lucy Cavendish College.

Dorothy Emmet was formerly Professor of Philosophy in the University of Manchester. Author of *The Nature of Metaphysical Thinking Function, Purpose and Powers*, and *Rules, Roles and Relations*. Honorary Fellow of Lady Margaret Hall, Oxford, and Fellow of Lucy Cavendish College, Cambridge.

Richard Saumarez Smith read mathematics at Cambridge, and is now reading Social Anthropology.

Edmund Leach is Provost of King's College, Cambridge and Reader in Social Anthropology in the University of Cambridge. Author of *Political Systems of Highland Burma* (1954); *Pul Eliva: A Village in Ceylon* (1961), and numerous publications in anthropological journals.

Donald Michie studied anatomy and physiology at Balliol College, Oxford, and researched in genetics and reproductive physiology in the University of London. He is now Director of the Experimental Programming Unit of the Department of Machine Intelligence and Perception in the University of Edinburgh, and is author of a large number of papers on problems in the computer sciences.

Alec Dickson, C.B.E., has been Honorary Director of Community Service Volunteers since 1962. He founded V.S.O. in 1958 and was invited to the United States in 1961 for discussions about the development of the Peace Corps. Previously he worked in the field of Community Development in Africa, helping to launch the Mass Education movement in Ghana, and the Man O' War Bay Training Scheme in Nigeria/Camerouns. In Czechoslovakia in 1938/39, in Berlin just after the war and again on the Austro/Hungarian frontier in 1956/57 he undertook refugee relief. He now runs Community Service Volunteers from Toynbee Hall, Commercial Road, E.1.

William Nicholls is head of the Department of Religious Studies at the University of British Columbia, Vancouver. He read Classics and Theology as a Scholar of St. John's College, Cambridge. After serving at the Geneva office of the World Student Christian Federation, he was ordained in the Church of England, moved to Edinburgh in 1955 as Chaplain to Anglican Students, and to Canada in 1960. Author of *Ecumenism and Catholicity*, *Revelation in Christ* and editor of *Conflicting Images of Man*.

Rupert Sheldrake read the Natural Sciences Tripos and researched in Plant Physiology at Clare College, Cambridge, and in the History of Science at Harvard University. He is now a Research Fellow and Director of Studies in Biochemistry at Clare College.

Michael Hare, American architect turned philosopher, was educated at Yale and Columbia. For many years he was consulting architect to the Association of College Unions. During World War II he served in the Pacific as an officer in the U.S. Marines. Subsequently his firm has designed public buildings including U.S. embassies. In 1955 he turned to problems in the philosophy of design, and then to the philosophy of science. Author of *Macrocosm and Microcosm, an Approach to the Sythesis of the Real*.

Frederick Parker-Rhodes, who designed the cover, was at Magdalene College, Cambridge, and is now a research worker in Computational Linguistics at the Cambridge Language Research Unit.

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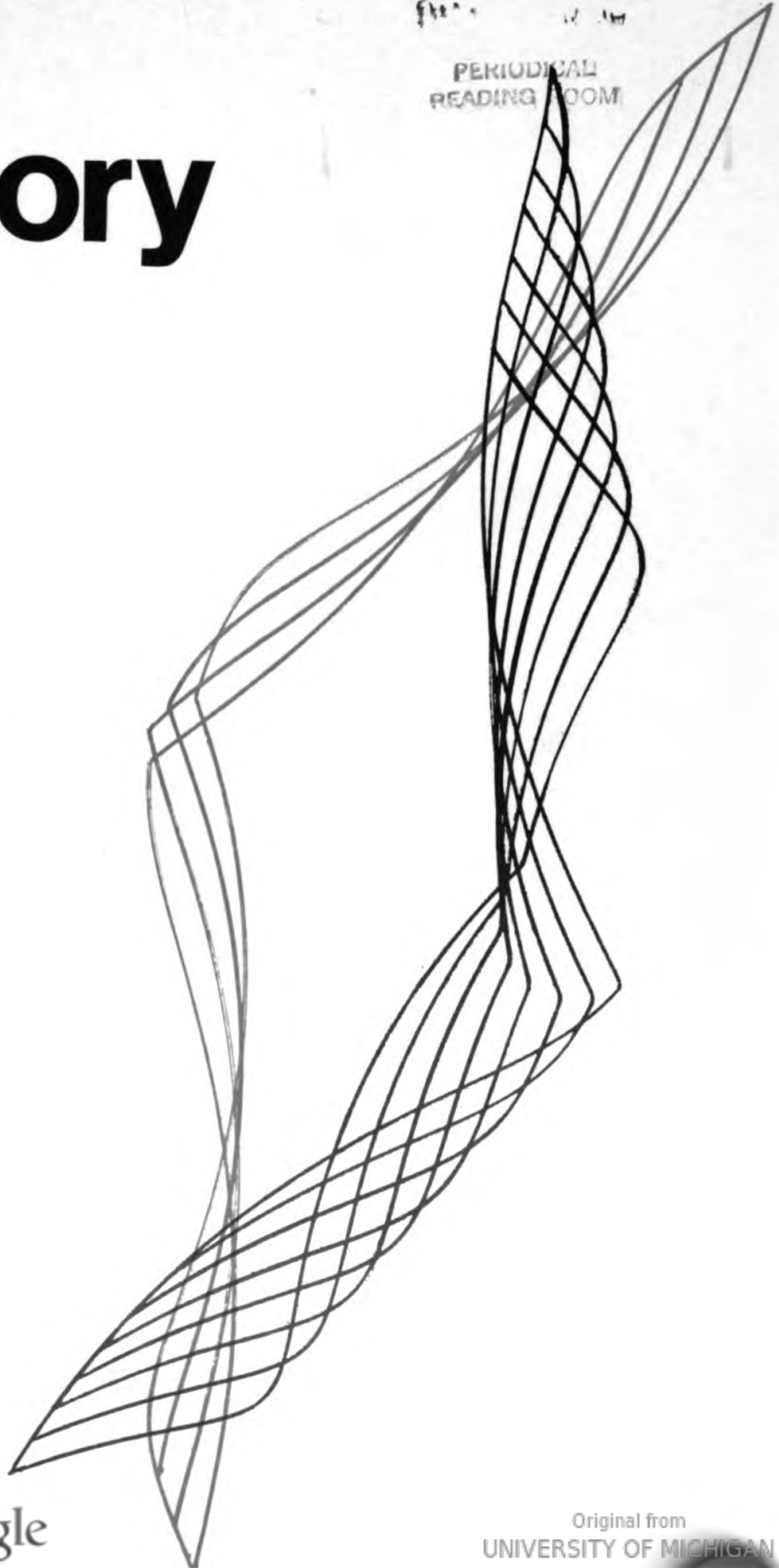
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THEORIA TO THEORY

Theoria to Theory is published for the Epiphany Philosophers by Pergamon Press, Oxford, London, New York, Paris. Advertisement office : 4 Fitzroy Square, W.1 (01-387 4455). Subscriptions and orders to : Subscriptions Dept., Pergamon Press Ltd., Headington Hill Hall, Oxford (64881). 7/6 a copy; annual subscription (for 4 quarterly issues), U.K. only 30/-, U.S.A. and Canada \$5, other countries 35/-.

Editorial correspondence, submitted articles, and books for review should be addressed to The Editor, *Theoria to Theory*, 9, Marion Close, Cambridge.

Editor : Dorothy Emmet.
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The publisher reserves the right to dispose of advertisement colour blocks after twelve months, monotone blocks after six months, with or without prior notification.

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Editorial

In earlier numbers we have called attention to the way in which, in McLuhan's words, "the West is turning East just as the East is turning West", and have said that this flight eastward would be continuing to occupy our attention. This number contains a dialogue in which Andrew Rawlinson, the concrete poet who designed our first cover, describes the doctrine of the "Living Master" in the teaching of the community of the Radha Soami Satsang at Beas in the Punjab, of which he is now a follower. We are also publishing as background one of the letters of their late Great Master, and a short historical account with a select bibliography. Why do we fasten on this form of Eastern spiritual teaching, and why do we take it seriously?

To begin with, there is the fact that this is the centre in India to which a number of young people, some of whom we know, are turning and whose discipline they are following in a way that is a challenge to Christian practices (setting, for example a standard in prayer in the sort of way that the Russian classical ballet, when it came to London, set a standard of dance). It also lays a problem in Comparative Religion on our doorstep, and one in which Comparative Religion, as at present pursued academically, helps us very little, firstly because this is done almost entirely out of literary sources; and secondly because these are interpreted so closely within the context of their own cultures and traditions as to make cross-comparison virtually impossible. The social anthropologists have the edge on the history of religious people in being directly interested in observing what is being done in contemporary practice. But their method is then to interpret the practice externally in the context of what is going on in other sides of the life of the social group. This is well worth doing, but it doesn't help us to understand the inner aspects of the practice. Moreover, now that mass communications are taking these matters up, and people go back and forth from one part of the world to another, taking an aeroplane from London to India, and from India to California and back to London (or Cambridge), the notion of closed cultural contexts is breaking down. We have in fact got syncretistic comparative religion all round us, and we have to find the methods for studying it.

The case for the primacy of our looking at the teachings of Beas has been put so far on contingent grounds of contact and

opportunity. Beyond this, there is also a Christian case which some of us connected with this journal see, not all for the same reasons, but adding up to reasons for taking it seriously.

The Flight to the Himalayas, as we said in T. to T. Vol. 1 number 4, is a contemporary version of the early Christian flight to the desert. The dust of the desert is in people's own souls. It has been said that there are now no happy Christians, at any rate among those aware of the situation in which they are. Christians may indeed be finding ways into a kind of union with God through the very stresses they have to undergo in dark nights of the will as well as of faith. But it is time that we knew what we were doing.

The study of the Beas community may help us to understand better some sides of early Christianity. This was surely a Living Master religion; indeed it looks as though the row with Temple Jews came about because this was being superimposed on the more ancient and iconoclastic Jewish monotheism. Raymond Pannikar, who maintained a view very pertinent to this discussion in T. to T. Vol. 1 number 2, wrote a book called *The Unknown Christ of Hinduism*. There may also be an unknown Hinduism of Christ. If early Christianity is seen as a Living Master religion, the picture that comes out may be more like the Catholic than the Protestant pattern; some will say that this is because it takes us back to a deep root behind historic Catholicism. Others (the editor for one) who approach this with Protestant presuppositions, may say that if early Christianity does turn out to have been like this, that will be an important historical fact, but not in itself a reason why we should ourselves go back to it. Certainly Protestants have continually claimed to be going back to primitive Christianity, but on views of what it was like that were historically highly dubious. Protestantism has also stood for a view of Christianity which looks forward and has thereby won gains in moral democracy. Today most of what it has won has got incorporated into secular society and the "secularization of the Gospel" could be its last erosion. If Protestants are to recover inwardness as well as going in for outward activism, they would do well to study a deep and strong tradition, such as Sant Mat, even though they may still have to find their own way after having studied it.

We have said that sociologists and social anthropologists are still fumbling over the relations between inward forms of experience and outward forms of society. They tend therefore to look at what is standardized, and miss the creativity in a particular kind of vocational relationship. To take a long look at the Master-Disciple-Guru-Chela relation might help them to redress the balance. For

comparison there is our own tutor-pupil relation. When this is more than formal, there is caring here too : sometimes indeed a tutor may find himself doing something not unlike taking on a pupil's "karma". It is doubtful whether many pupils in the West are likely to see the Radiant Form of their tutor. It may rather be that a tutor, struggling over his pupil's tangles in his own mind, may find himself seeing *their* radiant forms—and this is right and the Christian thing to do, since his own role is likely to be that of their servant rather than their Guru. This role can be a weakness as well as a strength in a society where many, and for good reasons, absolutely require to find their Gurus.

We intend, then, to study Sant Mat, and hope eventually to produce a publication, not only on its present significance, but also on the light it throws on early Christianity. In this we shall have the advice and collaboration of W. H. C. Frend, who writes below about contacts between East and West in the first centuries, of Derwas Chitty (author of *The Desert a City*), and of Ninian Smart.

In the meantime there are various points to note where trouble and misunderstanding arise :—

1. People persistently say that teaching like Sant Mat is selfish and ignores social problems. For the Community of Beas this is not true; it is merely the case that they are reticent. They run a hospital for the benefit of residents, visitors, and neighbouring villages; they look after their old and incapacitated workers; and during the displacement of populations after independence they housed 2500 refugees. Their warnings on premature attempts to do good to others are exactly paralleled by the warnings given in Christianity in e.g. St. John of the Cross and the Friend's *Book of Discipline* against "creaturely activity". First sow the seed of corn inside you, says Sant Mat, and let it come to harvest; then you will have enough to feed the neighbourhood.

2. There is the insistence on vegetarianism. This is not at present morally well thought out, since (a) infertile eggs are prohibited as guilty, while milk, in spite of the murderous conditions of its production in the West, is innocent. (b) Taking life in war under the orders of your commander is judged innocent. (c) "Normality is everything" is a precept, whereas strict vegetarianism in the West is far from normal. Against these criticisms, it can be said that the Great Master correctly asserts that contemplatives can learn to live on less than other people, but care must be taken to get enough protein. Moreover, willingness to go vegetarian may be a test of being really prepared to change one's way of life. Apart

from moral arguments, whether or not a meat diet is bad for you is a question on which there is an enormous literature, and new points come up both ways. In the *Lancet* 1968, Vol. I p. 958 (referred to in *The New Scientist*, May 9, 1968) Dr. A. Wachman and Dr. S. Berstein of the Harvard Medical School say that a meat diet through its acid may gradually deplete the bone structure of the body.

3. There is the fear of re-birth. The West, if it could believe in immortality, would love to be re-born. The East, which does believe in it, wants to opt out. Why? Is it the threat in the doctrine of Karma (which needs to be seen as a scientific doctrine, or it is nothing)? Without prejudice to whether or not re-incarnation is true, some in the West would welcome the extension of experience it could entail. Someone grappling with the twentieth-century rat race might welcome, rather than be appalled at the prospect of being reborn as an acacia tree (one of the karmic threats).

4. The Beas community goes in for a "do it yourself" Comparative Religion which compares claims rather than facts. When it compares itself with Christianity, the right comparison should be with writings on mystical development such as those of St. John of the Cross. This would show that the comparison, *mutatis mutandis* can be made, and that St. John of the Cross reached the stage of Masterdom called Sach Khand.

5. Sant Mat claims to be *scientific*. This claim is also made by partly Westernized forms of Eastern teaching, such as those of Rudolf Steiner, Gurdieff, and Theosophy. These, and Sant Mat too, present a package deal view of science, in which a system is presented *in toto*, and it is not possible to divide off questions which can be separately investigated, but the modern view of science demands this. Moreover, truth is presented as something seen by the inner eye by certain people who have developed this, and others must take it from them, while we don't really know what the "inner eye" is, and the lack of external criteria means that the teaching cannot be developed. Sant Mat clearly does have empirical aspects as well as metaphysical ones (in the *a priori* sense of "metaphysical"), and so it should invite investigation.

Indeed the literature of the Beas community has destroyed the traditional Indian secrecy. You can find out a great deal about their practices, short of actual formulae of initiation (and this may not be for esoteric reasons, but to prevent unauthorized initiations). They throw themselves open generously in their writings; for

instance no attempt is made to explain away the absence of a Master for the original Tulsi Sahib in Agra.

In a Western context the Sant Mat claims only make sense against a background of a physiology which goes a very great deal further towards an integrated psycho-physical control mechanism for the human being than anything we have in the West. Of course they haven't anything in the East either unless you are prepared to count some very allusive use of some very terrifying symbolism as an explanation of some of our deepest experiences. However, they do try to deal with these experiences, and their attempt is scientific at least to the extent that it is prepared to go indefinitely into detail of some sort.

Comparing and contrasting the West, we find that the Christian claim concerning the death of the great Master, Jesus, covered the same countryside. It has usually been less scientific in the sense that it has failed to be prepared to go into the detail, and for this reason alone most Western thinking has broken away from it. It has tried to operate metaphysically instead, not realizing that if you haven't a lively background of interest in the physico-physiological phenomena of mysticism, the metaphysical formulations will rapidly degenerate into sermon talk. However, facts will be facts: if in fact there is a meta-physiological system at which the East is hinting with its "astral body", "etheric body", "spiritual body" (let us not forget that the problem of describing control in the human organism remains almost unmanageable) then the Christian tradition may not have been completely unreasonable in saying in effect you will have a more adequate understanding of man's place in nature if you accept that at least once a human body "rose from the dead" than if you allow yourself to be unconscious of the need for adequate explanation over the wide area at which the Eastern traditions keep hinting.

These last remarks are meant only in the sense which can be illustrated by a story of some islanders. They were alarmed when a ship's boat beached, whereas they had constantly behaved as though the submarine standing off in the bay for the last two days did not exist because it was too unlike anything in their experience to be describable. We should probably say that an islander who reacted to the strange shape in however outrageous and unscientific a way was nearer to having a grasp of his surroundings.

If we take Sant Mat, and indeed the contemporary flight to the East seriously, what should this mean for the Church (and here we are referring particularly to the C. of E.)? More than we can

see at present; but two things at least can be said. 1. This is the real Ecumenism, for Christians who want (as Beas may not) to be ecumenical, beyond the ecumenism of particular Christian bodies. But what will it cost? One thing it will cost is willingness on the part of some people to learn about another way of life by actually living it, at least for a time, and practising its way of prayer. The Church should say that there is no disloyalty in people doing this, and should support them in it.

2. Christianity used to be a healing religion. Some groups are trying to recover powers of healing other people. But it has now largely lost the psycho-biological skills in prayer through which people could heal themselves, and there is a sour grapes attitude to those in the East who do have them. They probably operate through the central nervous system, and if people are not to be caught up in the rat race, or worn out resisting it, they need to recover ways of self-healing. At present many are desperate and need psycho-physical discipline under direction. (But where are the directors?) The Sant Mat people say that this kind of thing can be a natural by-product of their Shabd Yoga.

From a Hindu or a Buddhist point of view it could be said that Shabd Yoga is unscientific because, in ignoring the lower centres, it is upsetting a natural, given, psycho-physical process. To this, however, Beas would answer that in this day and age Shabd Yoga is the right way to go, that it is the only way in which people will in fact succeed in going, and that it can be taught as a skill.

Could there be even a one per cent. chance that they are right?

* * *

We have had articles dealing in various ways with the theme of Stress. There is also Power, and it is this, rather than Sex, which is the problem of the contemporary world. "Black Power" (see our last dialogue), "Flower Power", "Student Power" (and from America there are rumblings of "Mother Power")—these are forming because people see that good will and high sentiments cannot be effective without means of influencing the places where decisions are made. ("Seats of Power" are, however, not as easy to locate as those outside them think.) There is a case for looking at relations between power and responsibility in new conditions; for instance, we have often heard that there should be no power without responsibility, but nowadays at the centre of many of our institutions are people with far more responsibility than they have power. In this number we are glad to be able to print notes of a lecture given by Alfred Adler, the depth psychologist who saw furthest into the

complexity of the desire for power. He shows how the child, struggling with his own separateness from others, turns the natural craving after god-likeness into a will to dominate. (This can corrupt the ideal of the "Living Master, especially where infallibility is claimed.) Adler's work has not had the serious attention which has been given for various reasons to that of Freud and Jung. Philosophers tend to write him off because Sir Karl Popper has told them that when he was Adler's assistant in Vienna, he came to see the Inferiority Complex hypothesis was infinitely elastic, i.e. could be made to cover any kind of behaviour, and so was not verifiable or falsifiable. If it comes to elasticity, the same might be said about Freudian Sexuality and Jungian Archetypes, and yet it is possible to state aspects of these omnibus notions in ways which can prove fruitful both theoretically and practically in exploring the human psyche. The same may be true of Adler's view of the centrality of the desire for power and its pathology.

* * *

In our January number we published an article by Hubert Dreyfus on "Pseudo-Strides towards Artificial Intelligence", and we commented on the propensity of some scientists, particularly in new sciences, and when writing for the lay public, to escalate their claims, so that something which is a remote possibility gets presented as likely to be done before long, and then as something as good as done, then to be so presented that it is not clear to the lay public that it is not already an accomplished fact (Dreyfus quoted some claims of this sort). This kind of escalation is now well under way in reports of what might be—will be—is as good as being—done in biology and "genetic engineering". *The Observer's* horror comics in two of its colour supplements during March were a compressed version of the more sensational possibilities forecast by G. Rattray Taylor in his book *The Biological Time Bomb*, without the reservations which he puts in the book itself. In spite of these reservations, the book is full of exercises in sensational escalation. A review article by a molecular biologist appears in this number; and we are glad to draw attention to the full and authoritative review which appeared in *The Times Literary Supplement* of April 25th, which shows there are a number of points where people are being given the willies unnecessarily through confusions of fact and fancy. Examples are the prospect of growing babies from ova on artificial placentas, and keeping alive disembodied brains. Since the term "Genetic Engineering" is getting into circulation, we quote the reviewer for the benefit of laymen: "There is no such thing as 'genetic

engineering' in animals or man, if by this we mean a deliberate specific alteration of the genetic apparatus by methods other than the selection of individuals in which mutations have spontaneously occurred. We have no means of altering the structure of a particular gene in a directed manner. . . . We can do nothing to alter the genetic construction of a particular individual, since this would involve producing a similar change in all the cells of his body".

Scientists in our culture are looked on as guardians of truth, and are trusted to be cautious in putting forward untested claims. Inside a laboratory there is likely to be extreme rigour and scepticism, distinguishing blue sky stories from what has in fact been done. But some popularizers of what is going on (and even some applicants for grants) are less rigorous. They can fall into what Plato called "the lie in the soul", a vicious self-deception of themselves and others about what has been achieved or is about to be achieved. Of course scientific truth isn't a simple matter, and the method of scientists is to see the whole of the world in terms of the picture of it which they are currently working with, because it has proved strikingly successful over some limited portion. Their ability to do this is part of their stock in trade, but their liability to see through the limitations of their own method is an important element in "blue-skyery". In scientific discovery, old pretenders never die; they only fade away. The scientists in the field in question have pretty efficient built-in devices, but the same is not true even for scientists in other spheres, let alone for the general public who don't know how the game is played. The imbalance between claim and disavowal seems to need a deliberate policy of correction, perhaps first by those publications such as *The New Scientist* which aim at giving a selective view of the current scientific picture. Reports for instance were published about the flat worms who learnt more quickly by acquiring each other's memories through eating each other. If this has been exploded, has it been publicly retracted?

* * *

Sir Alister Hardy replies in this number to the three articles bearing on his Gifford Lectures, thereby completing the serial for this quartrain. We realize that we have not yet had a discussion of Sir Alister's views on the possible relevance of para-psychology to biology. We don't want this most controversial part of the lectures to go by default, and hope to take it up later. In our next quartrain Dorothy Emmet will be producing a serial based on lectures which she was asked to give in the University of Manchester

last March, on Images, Icons and Models. We shall continue to have dialogues, since these clearly interest people. In general we are committed to looking into the problems raised by precognitive experiences, and this is bound to mean that the nature of Space and Time is a relevant topic, on which we shall make a start in the coming year. A colloquium on the conceptual foundations of Quantum theory at a detailed and technical level is being held in Cambridge in July. Some of our group are deeply involved in this, and some of the less technical thinking which emerges from it should be of interest to readers of T. to T.

Dialogue between Amy and Andrew: The Living Master

Amy Clarke, formerly Senior Classics Mistress, Cheltenham Ladies College and author of The Universal Character of Christianity; Andrew Rawlinson, formerly Scholar of Pembroke College, Cambridge and follower of Sant Mat.

Andrew: I ought to say how I came to find I needed a master : there was a time when I didn't think I did. I always knew that anything that was worth knowing was inside, not outside. I was interested in consciousness. You can vary your own consciousness, but you have the devil of a job to vary external events. I tried drugs which had results one could see. I wanted concrete experience that my consciousness was changing. I found the easiest way was by changing my awareness of my environment. I did some "happenings" which are an attempt to create your own environment. But of course, it didn't work. The main thing I was trying to do was lose my identity by merging myself in something greater.

Amy: Why did you want to lose your identity?

Andrew: I wanted to eliminate that which was giving me pain, and pain comes from separation, while union with God is peace. Therefore as long as we are not aware of God we will have pain, and when we are, we will not be aware of ourselves. The means of finding God must be given to you by someone who has himself found him, and he will take you back to God. This person is the Master, and you must meet him and become his disciple when he is actually alive. There is always at least one master on the earth.

Amy: Would I be misrepresenting you if I used the way I always think of it myself and said that you were ready to lose yourself in God, but that you could only come to this through a living master who will take you right into God because he is there already?

Andrew: That's correct. He is in touch both with you and with God.

Amy: I find in the Christian writings, especially those of the Eastern Orthodox, an approach that is fundamentally like yours. There isn't an absolute difference between Eastern mysticism and other kinds, but likeness that runs through them, including medieval English mysticism, such as that of Julian of Norwich.

Christians, as their language implies, hold that Christ is the Master; they are certain that he is the one to bring them through his humanity into the presence of God because he is there himself. The relation of the Christian to Christ is a relation to a living Master.

Andrew: Except that Christ is not alive.

Amy: Well, there I disagree. I should say that not nearly enough attention is paid to the Christian belief in the Resurrection. Christ is alive: in the most precise sense of the word. He is a living Christ, whose spiritual power is available to everyone.

Andrew: Can you explain why it is that Christ should have attained this new spiritual power in the way that he did? Why was it necessary at all that a man should die in order that his spirit should be available to people who came after him?

Amy: I think that at the resurrection the body of Jesus lying in the tomb was filled by an inpouring of the power of God comparable with the power that Jesus himself exercised when he raised men from the dead during his life time. Because of the releasing effects of the total "giving to God" of his life and death the power that raised him up included far more of the Divine power which energizes the universe, so that the body that rose had quite a different relationship to the universe from that which ordinary matter has. This is illustrated by the fact that the risen body was able to pass through solid matter—in the first place the walls of the tomb—(for it is specifically stated that the stone was rolled away by an angel): and the appearance of the risen body when the doors were shut also illustrates this.

In saying that the whole power of God entered into physical nature, I stress that it wasn't an injection of a sort of extra life force into the body—with, as it were, a hypodermic syringe. It was making possible the union with God which is the potential capacity of human beings. What brings so many people to amendment of life is a sense of injury done to something supremely lovely and desirable. You can't dismiss interior experiences as non-empirical. Jesus Christ satisfies this experience of the lovely and desirable and also exercises a power which, sometimes quickly and sometimes slowly, pulls your life into the direction of unity with the supremely perfect. The experience is that he is lifting you up into his own sphere of existence. The presupposition is that the human psyche is incapable of reacting deeply to anything which it does not intuitively and beyond consciousness know to be true.

To see how Jesus himself thought about his work you have to remember Jesus' emphasis on his union with the Father while

preserving the distinction of function. I don't think you will understand his insistence unless you realise that the power inside the world and the power beyond were really one *in his case*. What Jesus thought he was doing (and that is a serious consideration) was giving back to his Father a world which belonged to Him and had broken away from Him. So—he thought—he was making it possible for the power of his Father to be free in the world instead of blocked. He died in the belief that his death would achieve this.

I ought to add that the risen body—so empowered—was in a far wider and fuller contact with the entire universe than the earthly body had been. And what we describe as the *ascension* is our way of saying that he—the person Jesus—wholly human and divine, entered a condition from which he can pour back all his power into the universe, and so work out in it in detail the new relationship which he has made possible. And so each person who receives him is still receiving an absolutely living master. His humanity is still quite complete.

Andrew: I see that, and I understand it. But I don't accept it. What about people who died before Christ came? What happened to them?

Amy: There I can only say what I think. I come to think more and more strongly that the work of Christ and all supreme spiritual work operates at two levels, both in time and out of time, and in the effects of a great spiritual action there is in a sense no present, no past, no future. It operates backwards as well as forwards.

Andrew: Well, I can see the shape that you are going for; but what about the people since Christ who don't accept him?

Amy: I think they are as much in Christ as the people who do accept him, since Christ is the redeemer of the whole world.

Andrew: Well then, if the people before Christ came are all right, and the people after him, whether they accept him or not, are all right, what difference does it make whether we accept him or not?

Amy: You have a wonderful talent for asking the right question. I'm not prepared to say what difference it makes. I think it lies entirely in the mind of God which way each of us is going to come to him. But let me say how I think there is something in Christianity which corresponds to a human individual master. I say with all the emphasis I can that Christ operates not only and not exclusively through persons, if there aren't persons available. He could operate through making us look at a pebble in the right way, and he can

operate through books, or through the whole range of prayer. That is one thing that makes me feel close to you. But if you can find a director, someone who has been through the mill himself, his function is to bring you into a living relation with the master who is Christ. When this happens you find you do not just see him in his own personality, but you salute the Christ in him. The function of the director is not to attach you to himself as an individual but to show you Christ.

Andrew: The importance of having someone to teach you is like the Sant Mat view that you need a living master. But Christ just gets in the way. If the director is Christ, then he is God too, and why duplicate him? Anyone who can take you to God is God.

Let me explain the relation of God to the Creation according to Sant Mat. A human being or any individual being is originally soul in the creation. Out of God came the sound or a ray of light.

What I mean is that there is a stage of consciousness in which you will identically hear and see : you will not be able to distinguish between the two. But that is not a physical state of consciousness, that's a spiritual state of consciousness.

This is what the Christians call the Holy Ghost or the Holy Spirit, or the Word, and this is the manifestation of God in Christian terms; and in the Indian it is called Nam, which means "Name", because wherever there is just God you couldn't have a name, because there is only one thing : you can't give a name because there is nothing else to identify. But when you get away from God, when the Shabd or the Nam comes out of God then they are distinct, and you can say "That's God", and that is called the manifestation of God. When this happened the Creation started. As it went further along from God, it became less spirit, less soul and more matter and the creation of this physical universe is, as it were, at the opposite pole to God, who is Pure Spirit. It has got the most amount of matter and the least amount of Spirit, but it needs Spirit to keep it going. Souls were sent off from God, and they were sent into the creation. They started off as pure soul, and the nature of the soul is direct knowledge that you are God. When you have discovered who you are, in other words when you have attained self-realization, it is equivalent to saying you have discovered your soul and then when you have discovered your soul you know that you are God.

You haven't yet merged into God, but you know that you are God. So far I have been looking at it as it were from the top: from God looking downwards. But now looking upwards from

where we are, the one thing we can be sure of is that we don't know God consciously, so somewhere along the line we lost contact and that loss of contact, which was part of the design of creation, is the point at which the individual soul took on the covering of the mind, because mind and soul are distinct entities. Mind is that which works with forms and with things, and has the attribute of knowledge by external criteria, while soul has the attribute of direct knowledge, and when man got a mind (the Master says it is like a covering put on the original part of man) the light of God which he knew was dimmed. And gradually because mind works with forms and with external things his attention was turned away from God (away from the inner towards the outer) towards external objects, and that was the beginning of the illusion, Maya. The story of the creation is the story of original souls which went away from God and became involved in the illusion, in Maya, because they took on the covering of the mind, and the point at which the mind covered the soul was the point where there was more matter in the creation than spirit. Because you have got a continuum. At one end you have got the pure Spirit, at the other you have got, not pure matter because you can't have pure matter, but a large concentration of matter, and halfway you get more matter than mind, and that is where you need a mind to deal with matter. So the problem is that we don't know God, yet we are God, because originally we were created by God, and the question is, how do we get back? The answer the Master gives is you have to get back in exactly the same way as you got here in the first place and that is to get hold of the Shabd, to get hold of that Sound, to get hold of that Light which originally came out from God and is still keeping everything alive, is still permeating the whole universe because it is God. When you have got hold of that, it will take you back to God. Everybody is God and a master is just a human being who has got hold of that Shabd, that sound, from his master and has gone back and merged into God. For all this you need a master; for the Master is the Word made Flesh, as Christ said, and the Word is that Sound.

Amy: I am trying to put my finger on the actual point of difference between Sant Mat and Christian doctrine in order to explain why I think that the phenomenon of the Resurrection is crucial, and why it is there that you can't follow me. I think it is because of your belief that the world is illusory. You cannot believe that the very physical matter of the universe could be so used and transmuted as the Resurrection doctrine asserts it to be if it is illusory. The intimate inter-locking of spirit and matter is fundamental to

Christian belief, as is the original and redeemed goodness of the world.

Andrew: You see Christ as the incarnation of the being of God in a supreme way. It is fundamental to Sant Mat that the escape route has always been the same, has always been through a living master. And there is always a living master on the earth. The Master is total: he is God working in his creation. I think that what I am doing is me, but in fact my Master is doing everything for me. He has to touch me, his soul has to touch my soul. He has to do it from his side. At the time of initiation the Master unites his soul with mine, and he is God, and God is the only doer, so the Master does everything for his disciple. Christ could do this only for the people he initiated in his lifetime. But from Sant Mat's point of view there can't be disembodied power. If a living master were ever necessary, he is always necessary. If it were the case that you could be saved by a power not in the flesh, then no master would be necessary. So the notion of a unique mediator between God and man who can subsequently work as a disembodied power won't do. Your master has to be a human being.

Amy: But Christ *is* a human being as well as God.

Andrew: *Was* a human being.

Amy: *Is*—that is our point of disagreement. Let's now turn to the concept of prayer, where we have common ground. We agree that one must be prepared to accept discipline from a master, and seek for detachment from this world, with all its beauties. You must be prepared to be detached from things you love—anything which may separate you from God.

Andrew: Excellent. How do you do it? What is the practice?

Amy: I think there are simple ways in which you start: putting aside time for prayer, and the religious exercises of your church. Then you find you must give more of your life to prayer.

Andrew: Do you think that you do it by yourself?

Amy: You seek for someone who turns out to be the person who can lead you. If you do not find one, there may be other ways, but I think the norm is through an individual.

Andrew: Is this person united to God?

Amy: The goal is union without destruction of personality.

Andrew: Do you go to someone, and then on to someone else? I see no end to this unless you find someone who really is Christ.

Amy: Your director may die, and after that it seems to me Christ takes charge himself. What happens if your Master dies?

Andrew: A master always operates from beyond the material sphere. What happens when you concentrate is that at a certain point in the concentration you will leave your physical body behind and you operate on a different sphere of consciousness. The object of the exercise is to beat death. There are a number of planes of consciousness until you reach the origin, which is God, and the Master operates on all of these. What you are trying to do in meditation is to go out of your body and be joined to him in his astral body. When a master dies he will look after those who were actually his disciples. If my master dies tomorrow and afterwards I leave my body, either in meditation or by dying myself, I will see the astral form of my Master. But the master-disciple relation must have started when both were in the physical body. There has to be the touch between God in the creation and your soul.

Amy: How does the Master teach you to become detached?

Andrew: Our Master guides us by giving us a method at the time of initiation. The prayer consists of a mantra, names, something to say with your attention or consciousness. At the same time as you say these names you contemplate on his face and so become attached to him and detached from the world. These two practices still the mind. In becoming attached to him you become attached to God. You can only become detached from the things of the world by being attached to a power which comes from beyond the world. That power is the Sound or the Word, and the Master is the Word made Flesh. The practice that the Master gives you is extremely concrete. It is easy to understand—you can do it all the time, and it offers you concrete results—a sound you can hear and a light you can see. These will have a definite effect on your consciousness. Since the sound comes from beyond the world, it will automatically affect your consciousness *in* the world, and your attachment *to* the world.

Amy: It seems to me that the way of prayer we both follow has most striking resemblances. There is fundamental detachment, and there is likeness of means; for Christians the repetition of the Name of Jesus and contemplation of him through a crucifix or an icon, or one of those most ancient pictures which may represent his face. To my mind the Christians are adding something to the world's religious experience as for instance in Sant Mat, not taking away. I would add that Christ is supremely one with God and so present in every living master, and every living master is an *alter*

Christus. I should not myself confine the work of Christ to the Christian religion.

We ought, the world being as it is, to concentrate on how it is that in religions whose views of the world are so different, the main shape of prayer is really practically identical in spite of that. There is practically nothing you have said about prayer which would differ from Christian mysticism. The other thing that is striking is the resemblance between the way you use your living master and the devotion of the Christian to Christ. I have come to see more clearly than I did at the beginning that it is this that is the real parallel, and that the work of the Christian director is to clear away the obstacles in oneself which hinder this complete devotion to Christ—that he is an instrument and that he does not fully correspond to your Master. I should like to say that it is evident that you approach God through your living Master, and that this is your way, and it isn't for anyone to undervalue the relation between the disciple and master. I am fond of a child's book about Prayer. *The House of Prayer* by Florence Converse. It is an intensely Christian book, in which a little boy wants to know about prayer, and he asks his guardian angel about contemplation. This angel, who is a most Christian angel, with ornaments and wings and all, takes the little boy to the Himalayas and sets him before an Indian sage rapt in contemplation, and waited on by his young disciple.

Letter 157, *from* Spiritual Gems

(Letters of the Master, Maharaj Sawan Singh Ji.)

This letter illustrating the teaching of Sant Mat, is reprinted here by kind permission of the Secretary of the Radha Soami Santsang, Beas, Punjab. The book is published by the Community.

157. I received your two letters. . . They are full of questions and analyses, as you say. I like them. I appreciate the great pains you have taken to study the literature available, and also your spirit of enquiry, aiming to clear up doubts and get at the root of things.

Limitation of Books and Book Knowledge: Books that matter, as distinguished from trash, are an account of the experiences of persons reduced to writing for the benefit of others. If anyone wishes to learn, say chemistry, he studies books on chemistry. Thus he learns something about chemistry. But if he gets instructions directly from a chemist, he obtains a better grasp of the subject. Again, if he sets up a laboratory, and begins to experiment, he will gain still better knowledge of the subject. And last of all, if he carries on his experiments under the personal directions of an expert chemist, he will avoid many a pitfall and will, in due time, become a chemist.

Again, one book on chemistry may appeal to one student and may not appeal to another; for, the mental make up of the two may not be the same. One may have his analytical faculty developed, while in the other, the synthetical faculty may predominate. A book, therefore, is not all-comprehensive. The author has written it from the angle characteristic of himself, and it will appeal only to persons having a touch of the same qualities. Also the same book may appeal to a person at one time and may not appeal to him at another time; for man is a variable creature, and his intellect is a variable factor.

Again, there is the difficulty of exact expression and of correct understanding. You cannot convey a correct idea of a railway train or a modern motor car to a person familiar with only bullock carts as a means of conveyance. A radio agent, without receiving apparatus, will carry but little conviction as to the marvels of radio, among persons who never before heard of the radio. Even with a radio set at hand, he is likely to be taken as a juggler.

So, when ideas about material things cannot be conveyed correctly in words, either written or spoken, ideas about non-material things, such as mental and spiritual experiences, cannot possibly be

expressed, with any degree of clearness and exactitude, to persons who never have had any such experiences. Yet mental and spiritual experiences on the mental and spiritual planes are as real as are the experiences of anyone on the physical plane.

A boy who leaves school after learning the three R's says, "Knowledge is unlimited". A student who completes the common school course, but who has not yet entered the University, also says, "Knowledge is unlimited". The graduate of the university also says, "Knowledge is unlimited". A university professor who has encompassed the limits of learning afforded by all universities, also says "Knowledge is unlimited". Now the boy, the student, the graduate and the professor all use the same expression; but evidently, they do not mean the same thing at all. The boy's idea of knowledge is very shallow, while the idea of knowledge as held by the professor is deep—a sea compared to the pond.

Books, therefore, convey but little at best, and are often misunderstood. The more critically a beginner examines books, the more discrepancies he finds, and the result is usually confusion of thought. Hence the need for association with a living teacher; also the need for actual experience of converting theory into fact, or individual realization. So, books, by their very nature, are imperfect and serve but a limited purpose.

Man, himself, is the perfect book; for all books have come out of him. Inside of him is the Creator, with all His creation. Study of books gives second-hand information : while study of man gives first-hand information; that is, the study of what lies within ourselves. So why not enter within ourselves and see what is there?

From the books we are to grasp the central or the basic idea upon which the book is based. If you examine books in that spirit (I am not defending all books, and I am sorry to say that the English language is poor in real literature on spiritual subjects) you will find that the central idea of Sant Mat, and of other religions, also, is the practice of the Sound Current. Many different names are used to express the idea. Christ, Mohammed and Vedic Rishis practised and preached the same. It may be said that they had studied, or risen on this Current to different heights; but the fundamental idea of all of their teachings is this Sound Current.

The type of the language, or the setting in which this basic idea is given, depends upon the place and the people the Masters work among, their customs, the manner of their presentation and their own intellectual development. And as these customs, manners, etc. change with time, their books go out of date. Hence the necessity of giving the same principle of the Sound Current afresh. The

message must be kept modern, and so adapted to the times and people to whom it is offered.

This Current is present in Man—all men. It is natural in man, not artificial. It can be neither altered nor modified, nor added to nor subtracted from. All else in this world is changeable, and changes continually, but not this Current. It is an emanation from, or wave of, the Great Source of all—the Supreme Creator, by whatever name you wish to speak of Him. Each individual is a spark or a drop of that same Infinite Source.

The Creator is at the top of this Current and the individual soul is at the other end, the Current thus acting as the connecting link between them. By that Current the life—even the very existence—of the individual is sustained. The individual feels no touch with it on account of the thick veils of mind and matter which cover it at this end. But it is there, in man and in all forms of creation, in the eye focus, whence it permeates the whole body below the eyes, and then goes out from the body, through the various sense organs. To catch it, the scattered and scattering attention must be controlled and held in the focus where connection is established with the astral, the mental and the spiritual planes, and the same finally emerges into its Source at the other end.

The first essential thing, therefore, is to *enter this laboratory within ourselves*, by bringing our scattered attention inside the eye focus. This is a slow process. But we are not justified in saying that we cannot do it, or that it is impossible, or that it is useless. Here is a worthy pursuit for the application of our critical and other faculties. If we cannot control and subdue our thoughts, arising within us, who else will? It is our job and we must do it, and we must do it now, in this very lifetime, while we are men; for man is the highest form of creation.

There are many ways of doing this; but from experience, Saints find that “Repetition” called “Simran”, done in the manner explained at the time of Initiation, is the best and most effective way, as well as the simplest way. If thoughts of the material world take us out of the focus, thoughts of the inner worlds will take us in that direction. When we are inside of the focus, we have disconnected ourselves from the material world and are on the threshold of the astral world. We, too, have cast off our material frame, and we are of the same stuff as the astral world, and are now in a position to function there. The same attention that was working in the material world is now capable of working in the astral world. And just as we now call this lower world real, we will

find the astral world as real, or more real, than we now find this one.

After reaching the astral plane, the same attention, now purified from the material dross, hangs onto the Sound Current, becomes further purified and rises on it to reach the spiritual planes. With every inch of ascent inwards and upwards the soul is casting off the coverings of mind and matter and is awakening from the deep slumber of ages. Needless to say that in this process the soul is not helpless, but it goes in and stays in, and comes out at will.

We may look at this matter in another way: The Creator is Existence, Knowledge and Bliss, or Power, wisdom and Love. An atom or a spark of this essence of Existence, is the soul which, encased in its coverings of mind and matter, forms the individual man. If the coverings were removed from the individual, the soul would be naked and would be qualified to know its Creator. The individual will know itself—attain “Self-Realization”—and will in turn, be able to know its Creator. Wrapped in its coverings, the soul merely hears of its Source from others or reads about the Creator in books, makes guesses and draws imaginary pictures to satisfy its intellectual curiosity. It also manufactures creeds.

If a lantern were wrapped in a thin muslin cloth, its light would be dimmed. If there is another envelope of thick, coarse cloth over the muslin, the light will be cut off entirely and the lantern will cease to serve the purpose of a lantern. Man is much like a covered lantern. There is light in him. There is the spark of Pure Existence, Knowledge and Bliss in him; but the envelopes of mind and matter dim his light and he gropes in darkness. Real Existence has degenerated and appears in him as reason, intellect and instinct. Bliss has degenerated into fleeting experiences of pleasure and pain.

Clothed in our dark coverings, we are incapable of understanding our Source. And the extent to which we succeed in removing our coverings marks the degree of our capacity to understand our Source. These remarks about the books, the Creator, the individual and the Sound Current, will help us in answering your three-fold question :

- 1—The Original Home so often referred to,
whence we came.
- 2—Why we left that Home?
- 3—Will we ever leave it again?

The individual, as he is constituted now, is incapable of understanding what happened or is happening at the source. The Saints

who come from that end, and have access to that end at will, know what is going on at that end; but, by the very nature of things they are handicapped in trying to convey information to the individual at this end. They attempt, in various ways, to satisfy their audiences. Some are convinced, and some are not. No matter what answer is given to these questions, we can always find fault with it, and even if reason and intellect are satisfied for the time being, the necessity for converting theory into facts of experience and personal realization still remains.

But the point is that Saints do not wish to satisfy their audiences by empty words. They offer to take the enquirer to the other end, and thus give him firsthand knowledge. One beauty of it is that, at that end, these questions do not arise. So, if the curious questioner would exercise a little patience and faith, most of his questions would be answered automatically as his experiences increase.

Suppose a man finds himself at the bottom of a deep well, where he is lonely and uncomfortable. Another man happens to pass that well. He carries a long rope. Finding this man in the well, he lets down his rope and offers to pull the man up, if only he will catch onto the end of the rope. But our man in the well enters into argument with the man above, and demands to know just how he came to fall into that well, and what is the guarantee that he may not fall into the well again, if he is pulled up. The utmost that the man with the rope can say is that he will take him out of the well and then he can study the situation for himself. But if the man in the well does not take the advantage of this opportunity, it only means that his time has not yet come to escape from his imprisonment.

Predestination versus free will: A will is free only so long as it has not acted. Once it acts, then that very act becomes binding on it. The second time it acts, it does not act on a free will, but as a "calculating will"; for it carries the experience of the first act with it. And a calculating will is not a free will, but a limited will. The very creations, or acts of a free will, work as limiting factors upon it, and guide it in its future activity. So, the more experiences one has, the more his will is guided and thus limited. And this is real predestination.

There is thus no antagonism between predestination, fate, karma and free will. We were free at one time. We acted, and then our acts became binding upon us. They curtailed our initial freedom. They now act upon us as unavoidable fate. Since our experiences have become complex and varied, these experiences now appear

in us as joys and fears, hopes and desires, each of which, in its turn, moulds or fashions our reason and intellect.

Intellect, reason and feeling, being what they have been fashioned to be, now determine our actions and make us choose the predestined course. Thus the acts of one life determine the framework of the next life. Like farmers, we are now living on the crop we gathered last, while we are preparing the soil and putting in the seed of the new crop. Although we must undergo our fate, there being no escape from it, yet all is not lost if we use the little freedom we have in such a manner as to lead to our ultimate rescue.

We wish this age long wandering from life to life to come to an end. And so it will, if we choose the means of escape. The easiest, the safest and, in fact, the only way out is association with the Free Saints are free by virtue of Their practice of the Sound Current. And They come among us with one single mission—that of connecting us with the Sound Current and so making us free. And this is the only Path of Spiritual Freedom.

Facts versus Theories: That which may be a fact to one man, may not necessarily be a fact to another. And it will not become a fact to him, until he has had a similar experience. Facts of Sant Mat are reproducible, like facts of any science, and can be demonstrated in the laboratory of Sant Mat. The laboratory of Sant Mat, as said before, is inside man. Anybody who enters this laboratory (brings his scattered attention within himself at the eye focus) can see, feel and realize what the Saints say, and he can repeat the experiment as often as he likes.

Sant Mat deals with facts only, not with theories or beliefs. It lays down a practical course for its devotees. It is practical through and through, and it can be executed by young or old, male or female, wise or simple minded—while, at the same time, they are enjoying the fullness of home life.

Life Duties: Sant Mat is natural, and hence rational. It expects its devotees to live a normal life and to do their duties better than others. Sluggards do not make any headway here or elsewhere. Sant Mat creates detachment in attachment, living in the world and yet not of the world. With mind under control, stimulated by a personal knowledge of other and better worlds, the disciple's viewpoint of life and of its duties and responsibilities changes.

The life here actually becomes unreal and its values are assessed accordingly. Things which others lay much stress upon, become of little value to the disciple.

And often that which others may consider valueless, and even foolish, may become of more value to the disciple than life itself.

This is because he looks down upon life from a higher viewpoint. But this does not mean that anyone may neglect a real duty. Compared with life in the worlds above the eye focus, the life below the eye focus (our present condition) is no better than a dream.

If people would go inside the focus, and enter the upper worlds, they would become eternally happy. Empty talk would cease. They would contemplate the Grand Reality. So, first you are to control your mind and rise within yourself to the eye focus, and the other man is to do the same within himself. When inside the eye focus, you and he have both cast off the material coverings, and matter is now no longer a hindrance in your study and upward march. Neither is it a hindrance in your communications with each other, while you are both above the eye focus.

To do this, it is not necessary to leave home or country. Anybody who goes inside of his focus is independent of time and space, and he can, from his own experience, give guidance to another who has not reached so far. He who rises still higher, and has access to other and higher worlds, is capable of guiding others to those higher worlds.

As in all other branches of study, a student who occasionally meets his teacher and converses freely with him, has a distinct advantage over one who takes only a correspondence course. The same is the case here in Sant Mat and the development on this Path. But the beauty of it is that, when you gain access to the inner Light and the Words of Light within, the elements of time and distance so completely disappear that you stand face to face with your teacher and Master, and He will always remain right there to instruct and to lead you as well as to strengthen you.

You need not accept anything which does not appeal to you in books, or even in my letters. You may leave aside, for the time being, the ultimate object of life and its how and why. You may start your enquiry from this end, and then take as your objective the attack upon the eye focus. Reach that point as best you can, by this or any other method. Draw up your own plans, if you wish. Only make and execute some plan to reach that objective. Bring your plan into action. That is the main thing. And then if you find it does not work so well, come back to this plan. The main point is to reach the eye focus somehow. You will be dealing with your own attention. If you succeed in holding it inside of the focus, you have won the battle of life.

You say in eight weeks since your initiation you have made no progress. *Sant Mat does not fix any time limit.* Let us appreciate the situation. Ever since our birth, at which time we left

the eye focus and came out of it and established our connections with this world, we have not gone inside of it. Sometimes, when we have a deep, intricate problem to solve, we close our eyes and try to think by holding all our attention in the eye centre. We do it for a short time, but soon run out again because we have acquired the bad habit of always remaining away from the focus.

Poets, painters and musicians receive inspiration from this point. All great thinkers get their ideas clarified here. Whatever scientific progress the world has made, it has all been derived from this source. This focus, back of the eyes, is the fountain of all inspiration which has produced the world's masterpieces. And whatever further progress is to be made in the future, the source of information and inspiration will still be this point. Here is where Divinity comes down to meet the struggling man.

And what holds us outside this focus? Why does not everybody in the world rush, with his utmost ability, to enter this magic fountain of inspiration and wisdom? Because our attention has always been, and is yet, attached to our bodies, to our near relations, to our homes, to our countries and to our pleasures; sometimes to our pains and sorrows. We have so much identified ourselves with these things that we have lost our identity. Unless now we start detaching ourselves from these outside connections, begin to develop the capacity to switch our attention on and off at will, we can make but little progress on the Path.

We are to re-establish our identity, to assert our supremacy over our minds and bodies. Mind must be made to work when we wish it to, and to remain motionless when we wish it to do so. We must become able to enter this body when we wish, to function in this world when necessary, and then to go out of it at will, when we wish to function in another world. It is the attention which is to go inside and see, and so long as it is running outside, who is to see inside? If the owner of a house sits always outside of his house and complains that he cannot see what is going on inside, his complaint is not justified.

This detaching the attention from the external connections is a slow affair. Habits become second nature. It takes time to form new habits. But slow and steady wins the race, and practice makes perfect. Follow your mind for a minute and see what keeps it away from its headquarters. Avoid whatever interferes, and accept what helps in reaching your objective. I have already given you the Saints' method, based on long, long experience.

If anyone is sure that he is on the right Path, then if he takes but one step a day, he is still approaching his destination, and is

sure to get there some day, no matter how distant his destination may be. You will perhaps say, "How am I to know that I am on the right Path?" I give you the means of proving it for yourself. Until you have proved it for yourself, you must, per necessity, accept something on faith. You would have to do the same if you were building a bridge.

We have taken as the objective, the eye focus. In a way, we experience this daily. We come to this focus every time we pass from the wakeful to the sleep state, and return. When we are going to sleep, our attention is drawn toward the eyes, and then the whole body goes senseless. We do not (our attention does not) stay at the eyes, but rapidly the attention passes down to the heart or the navel centre and becomes dull there, and we become completely unconscious.

When engaged in talk and you become overpowered by sleep, you may have said to your friends, "My eyes are getting heavy. I have sleep in my eyes." You may watch your attention going first to the eyes, when you pass from the conscious to the sleep condition. You may study the behaviour of a child when he is about to go to sleep, or return from the sleep state. A student reading his book, when overpowered by sleep, struggles to keep his attention in the eyes.

Now, if you wish to go inside and prove this Truth, fix your attention inside of the focus, hold it there by force of a determined will. Let the body become senseless, but hold your consciousness at the focus, becoming unconscious of the lower world, but fully conscious of all that is going on at the focus. Then enter the astral world and pass on to still higher regions, enjoying a condition of super-consciousness and great delight.

Lucky, indeed, is he who spends his short life in the Master's company. "If a man is a true seeker, he should give himself up to the Sat Guru and drop all else". It has been said already, how the attention of man is attached to all sorts of worldly relationships and things. There is hardly any attention left for the study of self and for seeking God. Look about you. Who has time for all the needs of his own soul? He should take time, but he thinks he cannot. His attention is so monopolized by trifles that he has no time for most vital concerns.

A true seeker who gives undivided attention to the things of the spirit is a rare bird. But men follow after that which they love best. A lover cannot be kept separated from his beloved, for he has given himself over to his beloved. His beloved is his life. The

quoted passages only point to the ideal. A Saint is lucky if He gets one or two genuine seekers during His whole lifetime.

Facts about eating: Everyone may eat as often, and as much, as is necessary in carrying out the work in which he is engaged. The body is to be kept fit and in perfect health, as nearly as possible. A lumber-man's food is different from that of a soldier, and a soldier's food is different from that of a singer or a philosopher. The same rule applies here. Sant Mat is not a profession and its devotees need not be set apart in a separate class. They come from, and belong to, all classes. Sant Mat exercises are to be practiced while one is carrying on his duties, in whatever sphere he may be placed. My own Master was a soldier.

I have answered most of your questions by giving you the underlying principles. If, however, you have any further doubts, you are free to ask such questions as may occur to you. No need to quote passages from books. Put your questions straightaway. That will save you time and trouble.

Notes on the History of the Beas Community

Beas is short for Radha Soami Satsang-Beas, and the group has existed in its present form since 1861, when a recluse emerged to begin initiating disciples, and became their Master. He had for many years been meditating on the teaching of the saints of his tradition such as Kabir and Guru Nanak, and on the *Adi Granth*, the sacred scripture of the Sikhs, and now he started teaching his own interpretation of their wisdom and spiritual practice. Behind the *Adi Granth* lies the basic Hindu world myth, mixed with Islamic features, since the Punjab is Moghul country, and India is hospitable to religious insights from every source.

At the Master's death, he left his wife in charge of the disciples and she in turn appointed one of them, a sepoy with 32 years of service in a Sikh regiment, as Master. In 1891 he founded a colony on the banks of the river Beas in the Punjab, and before his death in 1903 he appointed as successor another regular soldier, an engineer who served for 28 years in the 14th Sikh regiment. This man, Huzur Maharaj Baba Sawan Singh Ji, was Master for 45 years, and much of the building and development of the colony took place in his time. His writings form the core of the numerous rather repetitive publications put out by the group, and he is revered as the great Master. At his death in 1948, his place was taken by a professor of chemistry who had been vice-principal of the Government Agricultural College at Lyallpur, but he only lived another three years, and was followed in 1951 by the present Master, Satguru Maharaj Charan Singh Ji, who was a law graduate and owner of a farm. During recent years the colony has drawn enquirers from Europe and America in increasing numbers, and suddenly finds itself deluged with Westerners who are discovering the way to an interior discipline and a vision which their own traditions have failed to awaken.

It is, as the list of Masters shows, a body of lay people, who marry and carry on worldly professions; indeed self support is strictly enjoined on its members. Nor is it self-regarding, for at its vast headquarters, there is not only a free kitchen for workers and visitors, but there is provision for feeding and housing its elderly and disabled workers, and a hospital which also serves neighbouring villages. The main activity however is spiritual development, and

to this end, besides personal interviews with the Master, there is at Beas a daily routine of 2½ hours meditation at 3 a.m., a spiritual discourse at some time during the day and sometimes an hour's bhajan (meditation) in the evening. The colony is strictly vegetarian. Beas is a "bhakti" or "personal worship" school in its most sharply focused form. There is total obedience and total devotion to the Master. This Master can only accept pupils while he is in the flesh, and at his death he must hand on the Mastership to another for the teachings to continue. The method of training is through "inner speaking", "inner seeing" and "inner hearing".

Short list of books

Philosophy of the Masters, Vols. 1–5, by Huzur Maharaj Sawan Singh Ji.

My Submission, Parts 1 and 2, by the same author, and forms a short summary of his teachings.

Spiritual Gems (1919–1948) is a selection of letters from two Masters.

Science of the Soul (1948–1951) is written by the 4th Master, with summaries of his teachings.

All these are published by and obtainable from the Beas colony, as well as works by the present Master.

Alphonzo Caycedo *An India of Yogis*.

As a background for those who know little about the Indian "bhakti" schools of Masters and disciples, read :

Anne Marshall. *Hunting the Guru in India*. Gollancz. 1963. This is a lighthearted but sympathetic account, by a Western trained psychiatrist, of several schools, including Beas.

For a scholarly account of one such school (Ramanuja) by a Lutheran observer, see :

Rudolf Otto *India's Religion of Grace*. S.C.M. 1930.

Some Cultural Links between India and the West in the Early Christian Centuries

W. H. C. Frend

The attraction of the religions of India to the Western world has been long-standing. From the moment when the conquests of Alexander the Great brought the Indian sub-continent within the ken of the Greeks as the land of age-old wisdom, trading, artistic and religious contacts developed between the more accessible parts of India and the Mediterranean world. The object of this short note is to describe some of these links with an eye to their importance in the development of early Christianity.

In the first half of the first century A.D. an anonymous merchant from Roman Egypt left an account of voyages down the Red Sea as far as the Somali coast and Zanzibar and then following the monsoon winds round the Arabian peninsular to the mouth of the Indus and thence to the Malabar coast. His *Periplus of the Erythrean Sea* (i.e. the Red Sea and Indian Ocean) not only tells the story of great enterprise by the merchant, but gives a unique account of the well established organization of markets used by western merchants trading with India.¹ One sees a system of exchange through accredited merchants grouped in "factories" not unlike that which grew up in the early days of Portuguese, Dutch, French and British ventures at the end of the sixteenth century. One of these Greco-Roman "free ports", the Podouke of the "Periplus" has been identified by Mortimer Wheeler with some certainty with a site south of Pondicherry.²

The exchanges were fruitful. In south India year after year "the beautifully built ships of the Yavana (Westerners) agitating the white foam of the Periyaru" were awaited by the Tamil merchants. They brought gold and returned with spices and pepper.³ Some members of the crews stayed behind to become celebrated for their strength as palace-guards and their skill as universal handymen.⁴

¹ I have followed R. E. M. Wheeler's account in *Rome Beyond the Imperial Frontiers*, London, 1954, 112 ff. Strabo records that using the monsoon nearly 100 ships were trading with Indian ports each year. (*Geogr.* ii, 5, 12.)

² R. E. M. Wheeler, *op. cit.*, 123 and 145.

³ Cited from *ibid.*, 132.

⁴ Compare the *Acts of Thomas* (ed. M. R. James), 17 ff., where King Gundaphorus sets "Thomas" to work on building his new palace and

The trade, moreover, led to official contacts, Indian embassies being received at the courts of Augustus, Trajan, Aurelian and Constantine. India was becoming a land of mystery and promise, so that in 116 the aged emperor Trajan standing on the shores of the Persian Gulf and seeing a ship sailing on its way to India is recorded as exclaiming "I would assuredly have crossed over to the Indi if I were still young."⁵ Where Alexander the Great had led, his imitators sought to follow. Rome aimed at controlling at least the northern overland route to the Indian market.

The trading contacts both with south India and with the ex-Seleucid kingdom of Bactria on the north-western frontier naturally led to exchanges of ideas as well as goods. The Greco-Roman contribution to the forms in which Indian artists expressed themselves is illustrated by some westernizing tendencies in north Indian Buddhist art. Wheeler cites the schist frieze from the Kumala monastery at Taxila showing vine tendrils and "putti" among other figures, and at the Buddhist site at Hadda in Afghanistan a stucco figure reminiscent of a youthful deity in the Antinous tradition has been found.⁶ Indeed, western motifs seem to have been accepted with enthusiasm by artists working in "Mahayana" Buddhist contexts in the first three centuries A.D.

These influences were more than peripheral. Early in the third century readers of Philostratus were startled to hear of Greek gods being worshipped by Indian sages with Greek rites.⁷ This is a tantalizing piece of evidence especially as it seems to be corroborated by the presence of western pagan statuettes on Indian sites. Can one go further? Did Buddhism, itself predominant in northern India in the second and third centuries A.D., derive inspiration from the Greco-Roman cults illustrated by the objects traded with the West? Are there any links between the personal cult of the third century emperor and the Buddha of the same period?

The influences of the religious life of India on the West were more tangible. By the middle of the second century, the time when Christianity was beginning to emerge as a missionary movement in the eastern provinces of the empire, the Brahmins had gained a place in popular imagination as exemplars of the religious life. Lucian of Samosata, whose satire seems accurately to have reflected literate public opinion in the provinces of Pontus and Asia in

"Thomas" claims to be equally at home in making a plough or a ship or a palace.

⁵ Dio Cassius, LXVII. 29.

⁶ Wheeler, *op. cit.*, 160-161.

⁷ Philostratus, *Life of Apollonius of Tyana* (ed. F. C. Conybeare), iii. 14.

160–170 A.D., shows how “the Brahmins” were regarded as people of uncanny wisdom and fortitude, holy men who lived naked, their way of life being directed towards contemplation and bodily abstinence. They were people to seek out whom idealists, or to Lucian pseudo-idealists, would go on pilgrimage to India,⁸ though there were plenty of quacks among them, and they had achieved a reputation of converting a wonder-working mysterium into publicity-hunting. Some were ready to “cremate themselves, ascending a very lofty pyre and enduring cremation without any change in their outward appearance or sitting position.”⁹ Were these travellers’ tales or were Indians who claimed to be Brahmins a not unusual sight in Greco-Roman cities, especially on great occasions like the Olympic Games?¹⁰ Half a century later, the work of Philostratus shows how the influence of Indian religion had penetrated some of the more significant cults of the Empire. Philostratus was born in Lemnos in about 172 and migrating to Rome found himself drawn into the salon of the philosophic and religiously-minded empress Julia Domna, the wife of Septimius Severus (193–211). She evidently put into Philostratus’ hands some memoirs of Apollonius the wise man of Tyana who after a varied and adventurous life had died in the reign of Nerva (96–98). The “Life” of Apollonius that emerged was in some ways to become the pagan rival to the Gospels. Apollonius was a man of marvellous powers. He was consulted by rulers as a counsellor of virtue. Like Jesus he heals a young woman on point of death, he goes on missionary journeys preaching forgiveness and forbearance, he speaks in parables and he is brought before the judgement seat not merely of a prefect like Pilate, but of the emperor himself. After death he inspires an oracle to refute those who doubted that the soul was immortal.

An essential part of his preparation for his work as a man of religion was a journey to India. Philostratus indeed tells us far more about what the educated Greco-Roman provincial thought about the East than any other writer. First, the Indians were regarded as pre-eminently wise. “We have reached men,” Apollonius says, “who are unfeignedly wise, for they seem to have the gift of foreknowledge”, and he interviews the Indian in question. (“Life”, iii.12). After this he describes in detail customs of a group of

⁸ Lucian *Toxaris, or Friendship* (ed. A. M. Harmon), 34. “Demetrius left his own 20,000 (drachmae) to his friend and went away to India to join the Brahmins.”

⁹ Lucian, *The Runaways*, 7.

¹⁰ Lucian, *The Passing of Peregrinus*, 35 and 39.

Indian sages whom he encountered dwelling on a hill-top. "I saw Indian Brahmins living upon the earth and yet not on it, and fortified without fortifications and possessing nothing, yet having the riches of all men". ("Life", iii.5). Acts of levitation were performed "not for the sake of display" but as "an act of homage acceptable to God". They slept on mats on the ground and "grew their hair long on principle"; their garments resembled those of Buddhist monks today, and "Masters" among them had complete command over what they said or did. Some believed themselves to be gods. (iii.18). Philostratus believed that the Pythagoreans of his day owed many of their characteristic attitudes and beliefs to the influence of Brahmins, particularly transmigration of souls and vegetarianism, and he regarded Egypt as the mediator between Greek and Indian religious philosophies (viii.7).

This is indeed what one would expect, granting the importance of Alexandria as the major terminal of the seaborne trade between India and the Mediterranean world. When one asks to what extent religious ideas from India were penetrating Christianity at this period one is confronted with unexpected turns of evidence. The first indication of the existence of Christians in "India" (this might mean in this context the Arabian peninsula or the Persian Gulf) is in the record of Pantaenus the first head of the catechetical school of Alexandria leaving for India circa 190 and finding Christians there using the Gospel of Matthew in Hebrew.¹¹ This points not to a contact with Hinduism but with Jews, perhaps members of Jewish merchant communities settled in India coastal towns. It implies that as elsewhere in the Middle East the Christian missionary effort was at this particular time still directed primarily at the Jews. The "Acts of Thomas" which were probably compiled among the Christians of Edessa in the first decades of the third century also show that the first contact which "Thomas" has on his missionary and trading venture in the land of King Gundaphorus, in all probability in northern India, was a Jewish flute-player who retained her command of Hebrew.¹² Such contact between the Christians in the eastern provinces of the Empire and India would be geographical only. Hebrew-speaking people were unlikely to be cultural mediators with Brahmins, and the Parthian empire stood in the way of frequent day-to-day intercourse.

When one comes to consider the teaching of the Alexandrian theologians, Clement and Origen, one is again disappointed.

¹¹ Eusebius. *Hist. Eccles.*, v. 10.3.

¹² *Acts of Thomas* (ed. M. R. James), 5 and 9.

Clement's theology of the Logos involved conscious imitation of Christ through the exercise of reason by means of study and contemplation. Love towards God was the hall-mark of the "truly reasonable soul". The true Christian lived a perfectly controlled life giving way to no passions or physical emotions, becoming in the process ever more a reflection of the divine. The "perpetual imperturbability" (ataraxia) of the Christian sage was the intellectual basis for the monastic movement of the east. It was not the cavern but the opportunity for contemplation that attracted so many members of wealthy families to accept the monk's habit. Clement knows that some Indians were Buddhists and he mentions Brahmins and another group of ascetics called Sarmani who lived in woods among a catalogue of "barbarian philosophers".¹³ He compares the Indians to the Christian Encratites, i.e., they might be worthy but they remained outside the pale of orthodoxy, and on one occasion at least he indicates that the Brahmins were not an example to be followed. In discussing martyrdom he singles them out as exhibitionists who threw their lives away by leaping into the fire.¹⁴ They were not true martyrs. On the contrary. Plato provided the Christian with the true copy (paradeigma) of the heavenly city.

Clement therefore seems simply to reproduce some popular prejudices against Indian religion, and it would be surprising to find any direct and conscious influence on his concept of the ascetic life from that quarter. The evidence, however, suggests that such influences were at work on some of the Hellenistic mystery cults of the day. Of these the Pythagoreans played a part in forming both the vocabulary and ideas of the Christian mysticism of Clement's time, such as the image of "Christus medicus" and the theories found a few years later in Origen of successive rebirths of the human soul on its road to ultimate perfection. It looks as though the legacy of the Buddhists and Hindus on early Christianity may have been to a large extent an individual one. The Parthian empire stood in the way of permanent cultural and religious contacts between the Roman world and India. In the generation, however, in which Clement and Origen lived the policies of the dynasty of Septimius Severus (193–235) reawakened the dream of the conquest of the east by Greco-Roman power, and the work of Philostratus is a monument to those dreams. That Buddhists and Alexandrian

¹³ *Stromateis*, 1.71.3–b. See A. Dihle, "Indische Philosophen bei Clemens Alexandrinus", *Mullus* (Festschrift Th. Klauser), 1964, 60–71.

¹⁴ *Ibid.*, iv. 17.4.

Christians were in fact thinking in much the same type of religious terms also seems evident. It will be the task of research into the comparative study of early religions to discover whether despite all, some direct links existed between the two. Did the Alexandrian idea of the soul's ultimate absorption into the divine owe anything to nirvana? How far did Clement's "true Gnosis" owe its origins to the "tribe of the Brahmins"? Buddhism and Christianity, whose similarities so fascinated the Persian religious reformer Mani in this period that he tried to conflate the two into a new world religion, still present the same challenge to the inquirer today.

¹⁸ Ibid., iv. 26.172.

Alister Hardy Replies

Alister Hardy

I certainly find it gratifying that the Editor and her colleagues should feel that it would be of sufficient interest to readers of *Theoria to Theory* to have a series of articles dealing with my Gifford Lectures which were published in the two volumes *The Living Stream* and *The Divine Flame*; and that she should have persuaded three such distinguished authorities to write the first three contributions, as well as kindly giving me this opportunity of replying.

The first article (October 1967) entitled "Chance and Purpose" is by Professor John Thoday, Professor of Genetics in Cambridge, the second (last January) on "Social Anthropology and Natural Theology" by Dr. John Beattie, Lecturer in Social Anthropology at Oxford, and the third (in April) on "The Human Animal" by Professor C. H. Waddington, Professor of Animal Genetics in the University of Edinburgh. It will be more convenient if I deal with the two biological papers first as they are in some respects related, and I would like to start by thanking Professor Thoday for his sympathetic attitude to my position. Before making his criticisms he kindly says, for example, that I have

"certainly made a valuable contribution in stressing the role that behaviour must play in evolutionary innovation and tying it to the well established demonstration of genetic assimilation, and he is probably right in the view that most of us have under-estimated its implications. As he points out, the change of selection with change of habit may sometimes be expected to have most complex consequences."

This I may say is, in fact, the main message that I hoped to communicate in my first volume. If we should believe that the mind/body relationship has not yet been solved and that we do not yet understand the nature of consciousness—and this is what I am going on to say later in my thesis—then the view that behaviour is playing an important part in the evolutionary scheme destroys to my mind the necessity for regarding the system of Darwinian evolution as an essential materialistic process. I am indeed pleased to find that so eminent a geneticist should grant that I have here made my principal point; however, we shall see that at the end of his article he states that he feels that I have failed to show that there is any necessity to add any substantial new principle to orthodox

evolution theory. And he goes on to say that he finds perfectly acceptable the quotation which I took from Simpson, *i.e.*

“that the problem (of evolution) is now essentially solved and that the mechanism of adaptation is known. It turns out to be basically materialistic, with no sign of purpose as a working variable in life history, and with any possible Purposer pushed back to the incomprehensible position of First Cause”.

Here I think he has a mistaken impression if he thinks I am discussing the problem of Purpose in evolution or the universe; I am *not* doing this, at any rate in the first volume, *The Living Stream*. I do just mention it as a possible speculation at the very end of my second volume, *The Divine Flame*, but here I am emphatically not introducing the concepts of Purpose or of First Cause into my discussion. I am later discussing a theism which I regard as a part of the evolving mental side of life and one which eventually, in man, gives rise to religion; however, let me return to this when I have dealt with some of the other points, raised by Professor Thoday.

Very early in his article, in the third paragraph in fact, he writes as follows :

“Hardy sums up what he believes ‘to be the generally accepted view as to the mechanism of the process (of evolution): the action of natural selection upon the inherited variations which are found within any population of animals or plants and which appear to be due to the chance random changes in the chemical constitution of the nuclear material’. This is a brief summary of orthodox theory, which holds that mutational production of new genes, random *with respect to need*, is the primary source of innovation and recombinational production of new combinations of genes its secondary source, but it is an incomplete summary. Contemporary theory does not hold that either mutation or recombination are alone sources of innovation”.

Here I am afraid Professor Thoday completely misunderstands what I am professing. This statement of what he thinks I believe is taken from the beginning of my Lecture VI, and is the briefest summary of what occupies the five previous lectures in which I thought I had been making clear that the essential *innovating* part of this process was *not* the chance random changes in the genetical material but the action (which comes first in my summary) of

selection *upon* these variations. Almost at the very beginning of my first lecture, in the fifth paragraph, I say :

“This idea of evolution being governed by chance is another fallacy, as is well recognized by all the leading evolutionists of today. It is selection which *guides* the process, not the chance interplay of the genes and their mutations from which the selection is made; and this selection is far from random. Do we know, however, all there is to know about the different selective agents and their true nature? This I very much doubt and a lot hinges upon it.”

Now the whole purpose of my Lecture V, coming immediately in front of my little summary of the evolution theory, which he had quoted, was intended to show just how extremely potent are the forces of selection in moulding the variable, genetically constituted, organisms upon which they act. I began that lecture (Lecture V) as follows :

“It has often been suggested by critics of the modern evolution theory that random mutations of the genes and their recombinations acted upon by natural selection could not possibly provide the basis for a truly creative evolution. I want in this lecture to illustrate how surprisingly creative such natural selection can, in fact, be.”

I now set out to show that it is the power of selection which moulds not only the shape and the colours of animals, but, in addition, their instinctive behaviour to produce the best camouflage effects. I had hoped that all of this lecture would be hammering home the argument that it is the action of natural selection and *not* the chance random changes of the genetical material that is the source of creative innovation. But I am afraid I failed to make this clear.

Regarding his next point I would readily agree that in some cases there may well be a genetical pre-adaptation to a new habitat which a new habit may open up. On the other hand I would say that the curiosity and enterprising nature of animal behaviour may more often than not open up new habitats long before any pre-adapted genetical modification was showing itself. I cannot think that it is reasonable to suppose, for instance, that terrestrial animals first got webbed feet and then went into the water to use them; the more adventurous found that they got more food by hunting in the water and so their changed behaviour now acted as a selective force conserving such chance variations that made

their limbs better adapted to swimming. The same principle surely applies to most other examples, such as form of beaks and legs in birds—in fact to most adaptations of the higher vertebrates to different modes of life : running, climbing, digging, flying etc.

He goes on to say that

“Few would raise this question for plants. Neither does Hardy. Nevertheless plants provide just as difficult problems as do animals when we wish to explain the origins of marvellously intricate examples of adaptation so that it is difficult to see how Hardy’s postulates help to explain the origin of adaptations generally. Nevertheless Hardy does raise the question for all animals, and it is at this point that his book becomes controversial. His motive for doing so is clearly that he dislikes the chance component of evolution theory, and is searching for design, for final cause, which he suggests may be maintained as a group-subconscious, holding the basic pattern of form within bounds consistent with the ultimate design”.

Here again as regards plants and animals I am afraid he misunderstands me. On p. 183 of my book I discuss the adaptations of plants and show clearly how they may be moulded in all sorts of ways by external selection, and not, of course, by any behavioural element; whilst elsewhere (p. 206) I do make this an important distinction between plants and animals, I have nevertheless emphasized, as already pointed out in the whole of Lecture V, that animals are in fact subject to just the same kinds of environmental selection as plants *in addition* to any behavioural selection which may be operating. My whole thesis is that behavioural selection is *one* of many kinds of selection acting on animal life; one, however, which I believe becomes of increasing consequence as the mental side of animal life becomes more and more developed. Now in this same paragraph that I have quoted above he goes on to say that I am “searching for design, for final cause . . .”; this again is far from what I had intended to imply, but it will be best if I delay a discussion of this until I come to Professor Waddington’s work.

One chapter (Lecture VIII) of *The Living Stream* dealt with “some problems for current evolution theory”. Perhaps it was a pity I put them in for they are so much less important than the main issue of behavioural selection and as I said at the end of the chapter “I do not doubt that they will be explained in evolutionary terms in time, and I realize that in some cases I may well be unreasonably puzzled”. To deal with all the points Professor Thoday raises regarding these would necessitate too long discussion to be

undertaken here; I will only deal briefly with the first of them: that concerning "homology". I will remind readers what a zoologist means by homology, doing so by quoting a simple definition given by Dendy in his *Outlines of Evolutionary Biology* :

"Homologous organs are such as have the same essential structure, which they owe to inheritance from common ancestors, though they may be very differently modified in adaptation to different functions. The limbs of air-breathing vertebrates, however much they may differ amongst themselves, are all homologous organs in so far as their essential structure is concerned".

Thoday refers to a passage in my text which I will quote slightly more fully than he does, thus :

"When I was an undergraduate student just after the First World War, and indeed when I was a professor in the '30's, it all seemed so obvious. The same homologous structures must clearly be due to the same hereditary factors handed on generation after generation from the early ancestor with occasional changes by mutation; the wide variety of form seen in different animal groups being due to natural selection acting upon these factors or genes which were handed on, with mutational changes, from the original ancestral form".

He comments on this by saying that only the most naïve geneticist could, after 1906, have believed this. I would not call the late Professor J. B. S. Haldane naïve, and he was one of our leading geneticists. I am sure he taught me this when he lectured at Oxford in 1920 and he was still discussing it in his important and much read book *The Causes of Evolution* published in 1932 where he writes on p. 65 :

"In the case of the albino at least there can be very little doubt that the pink-eyed white in different species are due to inactivation of the same gene. I use the word 'same' to denote homologous structure and similar function, as I might refer to the eye as the same organ, speaking of a rabbit and a mouse. Actually, however, the sameness may extend to molecular structure. The principle of homology between genes extends to a large number, . . ."

And he then shows in a table how 37 different genes may produce homologous effects in nine different species of mammals and adds that "equally good examples could be given from plants and insects". Whether naïve or not there was at this time, in the thirties, as I have said, a general assumption among zoologists that

homology was to be explained in terms of similar genes. Dr. G. R. (now Sir Gavin) de Beer writing on this subject in 1938,¹ says:

“An important concept in biology to which modern embryology has a contribution to make is that of homology. The usually accepted view of homology between structures bases the resemblance between them on the genetic affinity underlying them as structures descended, however modified, from a representative in a common ancestor.”

He (de Beer) then goes on to show how modern genetical work has indeed destroyed this conception which he clearly implies was the accepted doctrine up to that time; after discussing various cases (*i.e.* the ones which I included in my book from his account) he writes, and the italics are his: “therefore it is clear that *homologous characters need not be controlled by identical genes*”.

It is essentially the difficulty of explaining homology when the genetic basis for it has broken down that constitutes my problem and I do not feel that Professor Thoday in talking about the organization of development, which he admits is little understood, makes it any easier for me to understand. I am still puzzled, but I was *not*, as he seems to think, looking for a final cause as a solution! But I shall come back to this as soon as I have discussed some aspects of Professor Waddington’s contribution to which I must now pass on.

As his main contribution to this series Waddington presents an essay “The Human Animal” which appeared some years ago in *The Human Frame* edited by Sir Julian Huxley. Then as an appendix he adds part of a letter he wrote me in October 1965 commenting on my first volume of Giffords, *The Living Stream*. It is this appendix, of course, which is particularly relevant to a discussion of my lectures—and to this I shall devote my attention—together with some remarks by the Editor in her introduction concerning our respective views—for in truth I would not wish to disagree with anything in his main article which on the whole I regard as being in keeping with my general thesis. Indeed while not actually referring to this essay, for I had not seen it when I prepared my lectures, I did discuss with approval other articles by him from this period which made essentially the same points (*i.e.* see my pp. 190–191). On his side he writes, in his printed letter, “as to the importance of behaviour in evolution, I think I have been

¹ “Embryology and Evolution” in *Evolution: Essays presented to E. S. Goodrich*, Oxford, 1938.

moving closer to your position and realizing more fully its central importance. The greater part of the letter which he reproduces concerns my contention that the essential part of his ideas of genetic assimilation were contained in the thesis put forward by Lloyd Morgan in this country and Mark Baldwin in America in the late 1890's. He writes as follows:

“In spite of what you say I still think there is something rather different about what I said from what they said. Please don't think I say this because I want to ensure any sort of 'priority' for myself. I quite admit that my ideas are extremely close to their's. They were, however, not actually derived from them. I don't believe I had ever heard of Baldwin and Lloyd Morgan when I first thought of the idea of genetic assimilation around 1942.” (*Theoria to Theory*. Vol. II p. 240.)

Of course I had not for a moment wished to suggest that he had taken his ideas from those of Lloyd Morgan and Baldwin. I did, however, want to indicate that he and nearly all other twentieth century biologists had neglected these writings which I regard as being among the most important since the publication of Darwin's *Origin*; I think this because they unite the essential parts of Lamarck and Darwin, by making the ideas of Lamarck, regarding the importance of habit and behaviour in evolution, respectable in terms of Darwinian selection theory. Their ideas were lost to modern biologists because just when they were beginning to be discussed there came, in 1900, the great discovery—or rediscovery—of Mendel's Laws which switched the whole of evolutionary thought in quite another direction. The small differences that may exist between Waddington's and the Morgan-Baldwin views are I think too small and technical to warrant detailed discussion here; I must just admit that in spite of what he says I still cannot appreciate the difference and may repeat what I said in my book (p. 168) “If, however, some subtle distinction escapes me and they are in fact different, then both may be working to bring about the kind of evolutionary change I am discussing”. The great contribution that Waddington has made in regard to this is that he has proved the validity of the principle by experimental methods, not once but again and again.

Now, in relation to Waddington's contribution let me now quote from the editor's introduction to the last issue of this journal in which his article appears. She writes as follows :

“The main difference with Sir Alister is that Waddington holds that human beings (whose culture he sees as part of Evolution)

need to be able to receive and accept socially transmitted information, and this he thinks provides a basis for ethical development in a way which does not call for any special spiritual factor. (His views are given more fully in *The Ethical Animal*.) Next time Sir Alister will be replying to all three articles in the series and we hope will be showing why he differs from Waddington."

This brings us near to what I left over in discussing Thoday's article: his belief that I am looking for a "final cause" in my evolutionary ideas. But first I will look at the supposed difference that the editor thinks she sees between Waddington's and my views. Again I am not sure that there really is a big difference between us here; he does not discuss a spiritual factor as I do, but this does not mean that he denies its existence. He can go a long way, and does, without the need for such a factor, but I don't think he intends to imply that what he is saying covers the whole of man's spiritual development. I discussed his *The Ethical Animal* at some length in my second series of Giffords, *The Divine Flame*, and wish he had been able to comment on my discussion of it. I did indeed feel that his thesis fitted extremely well into my picture of the development of man's spiritual side but that he did not wish at present to go further towards discussing this side in relation to evolutionary ideas. I will explain in a moment why I feel compelled so to do. To show that Waddington does not rule out the reality of man's spiritual side I will give the following quotation from his *The Ethical Animal*:

"Although the points I shall be making are certainly not without importance from a religious point of view, or viewed as factors in man's spiritual life, I shall not attempt to treat them in this manner, nor to venture into the field of inspirational writing of which Teilhard de Chardin and Huxley have provided us with such splendid examples."

Why I feel compelled to introduce the spiritual side is just because I believe, as a naturalist, that I can see overwhelming evidence for the reality of this aspect of man. It is this evidence that I collect from many different sources to make up what I call, in the sub-title to my *The Divine Flame*, "an essay towards a natural history of religion". I cannot, of course, review the evidence in this article; I can only hope that those who have not read the book may be persuaded to examine it. I will just give one quotation from the French anthropologist, Durkheim, whose work I discuss:

"Our entire study rests upon this postulate that the unanimous

sentiment of the believers of all times cannot be purely illusory. Together with a recent apologist of the faith² we admit that these religious beliefs rest upon a specific experience whose demonstrative value is, in one sense, not one bit inferior to that of scientific experiments, though different from them”.

Now having said this let me return to the supposition of Professor Thoday that I am in my evolutionary thinking looking for purpose or a final cause. In thinking this he has entirely misunderstood what I am driving at. If he had read the second volume he would have realized I think that I am not influenced by any feeling that there ought to be some purpose or final cause in the universe; I just find the evidence for the existence of a spiritual side of man so strong that to neglect it in one's evolutionary thinking is to me the equivalent of working in a field so governed by dogma (here that of materialism) that one has, because of a supposed “scientific” taboo, to ignore a large class of facts that come to one's notice. How much I agree, in a related field, with the views of the late Sir Cyril Hinshelwood in discussing consciousness in his Presidential Address to the Royal Society in 1959 :

“It is surprising” he says “that biological discussions often underestimate human consciousness as a fundamental experimental datum. In science we attach no value to unverifiable deductions, or to empty qualitative statements, but nobody defends the neglect of experimental data. Among these we cannot validly disregard those of our own consciousness except by a deliberate abstraction for which we must assume responsibility, and which we should not forget having made”.

And later he says:

“There is at present no obvious answer to the question of what kind of advance can possibly be hoped for in the problem of psycho-physical concomitance. This, however, is no reason for giving up thought which at least helps to avoid the kind of errors so easily made both about physics and about biology when the problem is ignored”.

My idea is that the spiritual side of man is a part of the evolution process. May I summarize my position by a quotation from *The Divine Flame* :

“I want to suggest that the linking of a natural theology to science need not seem such an outrageous one from a biological

² He is referring to William James and his Gifford Lectures *The Varieties of Religious Experience*.

standpoint as it may appear to be at first sight to some of my academic colleagues. All will agree that a great new step in organic evolution was taken with the appearance of sex which provides such an important mechanism for the production of genetical variation. The opposites in sex may be brought together by all manner of physical sensory means; from our own experience, however, the process is accompanied by an emotional ecstatic state we call love. Other forms of attraction have appeared in the living stream such as the mutual bond between parent and offspring in the higher forms—again accompanied in our experience by a different but related form of affection. Now we have seen with the coming of man a new phase in evolution almost as striking as that of the appearance of sex: the new psycho-social phase, as Sir Julian Huxley calls it, in which the very mechanism of the process is altered by the development of a new non-genetic inheritance—the handing on of acquired knowledge and experience. Should we not, as biologists, entertain the possibility that the rapture of spiritual experience—the so-called love of God—may, after all, be a valid part of natural history, coming into existence in the living stream no less mysteriously than did sex; and that perhaps it may have only developed as religion when man's speech enabled him to compare and discuss his strange feeling of what Otto called the numinous. It might be, as already suggested, a psychological system linking individuals with some extra-sensory element—some shared reservoir of spiritual power, or it might be some much greater Reality. I am pleading that, recognizing that we do not yet understand consciousness and the mind/body relationship, we should, as naturalists, examine both the phenomena of religious experience and of extra-sensory perception unhampered by dogmatic preconceptions.

“After this let me repeat what I said in the last lecture of my first series. In suggesting that the power we call God may well have some fundamental link with the process of evolution, I hope I shall not be thought to be belittling the idea of God. I would rather appear to be saying that the living stream of evolution is as much divine as physical in nature; and that what I am calling the divine flame is an integral part of the creative evolutionary process which man, with his greater perceptive faculties, is now becoming aware of. It is something which, if he responds to it, provides him with a power over his difficulties that he might not otherwise have; it gives him a feeling of confidence and it generates courage in the face of adversity. I would suggest to

biologists that since man is a part of the living stream we should not ignore his own experiences and behaviour as possibly throwing light on something fundamental in the nature of living things that might not be apparent to us if we confined ourselves entirely to the objective examination of other species of animals. The study of man himself, in all his aspects, is indeed an important part of a comprehensive biology. We must, of course, beware of undue anthropomorphism in our interpretation of other animals; on the other hand we must not forget that we ourselves are the animals whose nature we should know best of all”.

I don't believe that man as such was the inevitable product of evolution; I think it likely, however, even if the higher vertebrates had never appeared, or in the future be destroyed, that, given some thousands of millions of years, other equally sentient beings would eventually be evolved. Perhaps they might come from some strange race of terrestrial starfish which have not yet appeared on the earth, and come to have the same consciousness of spiritual and artistic values as man has, and perhaps an even higher reasoning power and a dexterity based upon not just a pair of hands but five!

Regarding purpose in the universe I say at the end of the book “that I don't think anything *useful* can be said, because it can be nothing more than the wildest possible speculation; nevertheless perhaps it might just be worth saying that, on purely logical grounds, it is not impossible to imagine a reasonable goal for the cosmic evolutionary process.” After making such speculation I leave it as an entirely open question.

Here I must leave the two biological contributions and come to the third, that by Dr. John Beattie on “Social Anthropology and Natural Theology”. I am delighted that he, a trained anthropologist of such wide experience, should be so much in general agreement with what I—a mere amateur in the subject—have said. Of course I knew at the onset that I could not cover all the ground in all the areas from which I was gathering evidence, and I said, at the beginning of *The Divine Flame*, that “the gaps in my reading will be obvious to those who are specialists in the different fields”; Dr. Beattie provides many valuable references to other researches that support my case.

I am indeed glad that he thinks I was wrong to suppose that “modern anthropologists, with a few notable exceptions, believe that religion can no longer be a valid subject for study”. In writing this I had been thinking of what Professor Evans-Pritchard wrote in his *Essays in Social Anthropology* in 1962 :

“Almost all the leading anthropologists of my own generation

would, I believe, hold that religious faith is total illusion, a curious phenomenon soon to become extinct and to be explained in such terms as 'compensation' and 'projection' or by some sociologicistic interpretation on the lines of maintenance of social solidarity. It has been, and is, the same in America."

Dr. Beattie quite rightly queries some of my assertions from his more expert knowledge and adds other important aspects. He ends most kindly as follows :

"I do not think that these considerations substantially affect the force of Sir Alister's main argument, though they do suggest that there is a darker side to the man-spirit relationship than he implies. It is not surprising, perhaps, that in the conditions in which these beliefs must have originated, the dangerous, threatening aspects of the spirit world should be the most stressed. Man's natural environment has almost always been inimical rather than kindly, and the spiritual agents through which it was conceptualized were bound to express pre-eminently these inimical aspects. Thus most often they were to be avoided, or at best propitiated, rather than loved. Sir Alister has well shown that recent detailed studies by social anthropologists indicate the universality of a belief in a God or gods, and of a conviction of man's dependence. If these studies also tell us a good deal more about the darker sides of 'primitive' religion than Sir Alister refers to, what he has selected is adequate and relevant to his purpose."

Dr. Beattie intentionally confined his review to my Lecture III which deals specifically with social anthropology; whilst I had not room in this limited space (one hour's discourse) to discuss the darker side of the religious complex, I did not neglect it altogether in my book. I discussed it towards the end of my last lecture (my p. 239) where I gave the following quotation from Dr. R. R. Marett, remarking that he "wrote this before Hitler's "religion" of Naziism had got fully underway, and with this I will end my reply :

"As psychologists, then, we must not be content to speak together in whispers about the lust or the cruelty that found their way into the religious complex together with the noblest of the human tendencies. Let us honestly proclaim that religious emotion is ambivalent, exciting the mind at once for better and for worse. At times, then, man is apt to think that he has reached the heights when he has merely touched the lowest depths of his spiritual nature".

The importance of the child in Adler's psychology

This article is written up from uncorrected notes taken at a lecture given by Dimitrije Mitrinović at the Village Hall, Ditchling, on 25th April, 1927. It is printed here by courtesy of the Trustees of the New Atlantis Foundation. Mitrinović, who lived in England from 1914 to his death in 1953 gave many lectures on the arts, philosophy, psychology and international and social affairs. He was responsible for making the work of Adler more widely known in this country by forming the International Society for Individual Psychology (the Adler Society) in London in 1926.

Dr. Alfred Adler is a physician; a practising all-round physician of mature age and of great life experience. He is a physician by nature and by gifts, and his chief interest is neurology. He does not call himself a psycho-analyst but a specialist in nervous complaints. It is also not below his dignity to cure the ordinary ailments of mankind. In the psycho-analytic movement, which is an extraordinarily expensive kind of therapy, Dr. Adler is a friend of the common people, a great knower of the ordinary human soul. Where others charge six to seven guineas for a consultation, he only charges 14s. This is characteristic of the man. Another characteristic is that he not only uses Viennese slang when he talks with his patients but also delivers his lectures in this way, speaking like any other ordinary Viennese.

Freud, in Vienna, was the originator of the young science which he called psycho-analysis. He came to this method through the study of hysteria. He studied hypnosis in France and was a great exponent of it. His experience of the great number of cases of hysteria which he treated by hypnosis has coloured his whole style and given him an exaggerated and one-sided insight into sex. Having treated many women patients for hysteria, he came to the conclusion that all neurosis and psychosis in mankind have their unconscious origins in sex. Freud has worked this out, becoming one of the founders of this new science by developing that particular motif.

In those early days, when psycho-analysis was being studied by only a few doctors in a private circle, Adler had an intuition from the beginning that it was too early to be sure of the soundness of

attributing everything in the psychic life to the sexual factor. The story goes that he always commented on these conclusions by remarking "Our science is still young. What about the influence of organ inferiority?" So it became clear that when Dr. Adler used the concept of the unconscious, which Freud had proposed, he saw the unconscious as being canalized into very different directions.

In this early group of those who created the psycho-analytic movement was also Jung, who practises in Zurich. He also recognized that Freud had generalized the concept of sexuality to include all manifestations, including infantile sexuality, and he felt that it was not enough to say that the whole psychic energy in a child is sexual. Jung has generalized the concept of the unconscious and sexuality still further to make it more abstract and spiritual. He identifies the Schopenhauer concept of Will, of the Absolute, of the Primal Force, with the abstract and general sexuality of the creation of all things. If to Freud sexuality means that force which reveals itself in most persons as sexual, to Jung it means the universal life-force of creation, of matter itself. This acts on the human mind, in the human body, in the cosmic forces; whatever happens in the universe is the result of this pan-sexual cosmic force.

As can be seen, Jung has merely generalized the concept of sex still more. In so far as he has transformed the concept of the unconscious to mean the Absolute Itself, the Universal Reality, and transformed sexuality to mean Force, Cosmic dynamism, he has actually supported Freud. Although he has improved him he has not corrected him. But in man's experience such abstract sex as Jung maintains is not the only force. There is obviously that force which is called Ego and which is in no sense a development of sexual energy and is not a result of the inhibition of sexual energy.

From Freud's point of view, without sexual force there would have been no civilization, no human art, no family institution; society would have been impossible, philosophy and science would never have existed. Mankind would have stopped at the animal stage. For Freud the Ego is made out of the web of the inner urge, when that inner urge becomes thwarted with inhibitions from the outer world. That part of the inner urge which is not dedicated to the physical expression of sex, changes in a miraculous way when inhibited and becomes consciousness; then that new entity, which did not exist before, that sexual urge suddenly creates a force, a reservoir for itself and turns against its own nature. From the drive of the will, the unconscious becomes transformed and acts as intellect and consciousness. The desire for bliss becomes the desire

for knowledge, and the interest in things. In short, by being inhibited by the world Bliss turns into Intelligence. So from the plane of sexual inhibition, which for Freud is the constant human emotion, is born knowledge and the instinct for truth.

When we read Jung we are certainly impressed with the marvelous insistence with which he explains the phenomena of culture as the sublimation of the sexual instinct. It is very consoling, after Freud, to turn to him and to become indoctrinated with the idea that consciousness is the saviour of sexuality and that intellect is the atonement of inhibited sexual desire, and that this inhibited sexual desire does give one the bliss of knowledge and the production of culture. To Jung the whole of culture is the sublimation of the sexual instinct, the final attainment of the suppressed unconscious desire.

But in actual therapy, when Jung is treating a patient, he still treats the disease and not the man. For Freud this holds good still more. Freud is a surgeon to the wound, as it were. The Freudian method is psychic surgery. We can learn from Freud the topography of the soul; he has classified the whole morphology of sexual suppression. Freud proceeds to cure that particular disease called "a complex" and both Freud and Jung only take part of the man and, as it were, take the cancer out of the soul. This surgical method has also classified mankind and its psychic states and has found a definite morphology of these diseases and a definite treatment.

Both these men, with all their scientific scrupulousness in therapy, nevertheless cannot abstain from classifying patients according to their own ideas and philosophy. This specially holds good for the Jungian system. Just as Freud, with his study of hypnosis and hysteria has turned in that direction, so Jung, through his study of the insane in the asylum in Zurich, has contributed much in this field. There he gained profound insight into the reality of psychic life, but he also acquired an attitude of looking at men as if they were all on the brink of an abyss, as if insanity was one step behind them. The insane can be classified, since they are insane, in a fairly satisfactory way and this classification holds good. Jung also proceeded to classify ordinary and healthy souls as if they had psychic diseases, so that Jung's treatment of neurosis is Freud's treatment made soft; mysticism and idealism have been brought in. Just as Freud is confronted with the gloomy Gods of the underworld, so Jung—for whom complexes are paths to omniscience and to insanity and keys to experience, for whom even normal psychology is an avenue towards genius and the highest spirituality—succeeds in

making psycho-analysis into a beautiful philosophy. Freud makes hells and Jung makes heavens.

The average man's soul is not so near to hell or to heaven, neither so sexual nor so spiritual but is very near to ordinary life, the daily round which man experiences everywhere at all times. It is not the gloomy presence of a hell which is very near him, nor the direct hope and intimation of salvation and metaphysical dissolution of the world. Life in reality is ordinary. Everything we experience in the day is roughly the same as the experience of any other man. And experience is altogether mixed up, it is difficult to say where insanity begins, where complexes begin, what is good and what is bad, also what is beautiful or ugly. Life is not kept together by a mechanism which is difficult to discover, but is kept together by the obvious fact that all souls—that all men depend upon one another. Human life is social life. All men are in the daily unity, in the daily web of ordinary relations of man to man. And it is in this fact of the unity of life, in which neurosis, charity, great goodness, lunacy, evil, everything are to be met. That central fact of life Adler has taken as the fundamental subject of psycho-analysis, and his way of treating patients is to confront them with the primary, shabby, muddy experience of everyday life in which mud and shabbiness are never the exceptions. There are always beautiful experiences mixed up with the ugly, and one cannot say whether life is good or evil, whether man is spiritual or not, one cannot discover from life whether sex or religion or the mere physical instinct for self preservation direct or preponderate in life.

Dr. Adler defines as the Ego the pure theoretical self-identity of a man. And he maintains that the Ego is the fundamental focus in relation to life: that man does not fundamentally crave for bliss, health, nor in a primary sense for power, nor for truth. Neither does he delight in error, nor has he a peculiar inclination for evil or delight in ugliness. But Adler maintains, through the experience of his primary evidence, that man just simply wishes to maintain himself, to perpetuate his own identity, from birth to death, or from infinity to infinity. Perhaps there is a film where that intuition of self is perpetually maintained from the unknown past to the unknown future. This line of man's will, the film of a man's experience, is the fundamental concept and contribution of Adler to psycho-analysis.

The Ego does not primarily crave for power, but to have power is necessary to self-preservation. Power is not the purely fundamental reality of psychic life. Man craves for power as the instrument, not of the physical body, not of the soul, not of his spiritual

self, but for the maintenance of the three together. The so-called body is indissolubly united with the so-called soul; the soul is also indissolubly united with the mind, the intelligence.

To Adler, intellect cannot be divided from soul, soul cannot be divided from body, nor the body from the individual, nor the individual from his own body. The simultaneity of the three, intelligence, soul and body, is for him a fact, a reality which transcends their separate reality. An individual is a focus point of social forces, of social relationships. He cannot be understood unless in relation to his immediate circle of activity, in his relation to beings, families, friends, states. A man is so interconnected with his surroundings, that every man in the world, finally, would actually belong to the proper definition of every other individual. In such a way not only is the individual embedded in his country and family but he is also embedded in all existing nations, as well as in the civilization in which he lives. A man is continually related to the whole organism of mankind during his life and also to the unity of ages. Not only is he related to his past, his ancestry, but also to posterity. For to assess our present actions we must look at them from the standpoint of future generations. We must act for those future generations which are being created by the present moment. In this way each individual is absolutely embedded into the world organism. This is absolute proof to Adler of the fact of the indivisibility of the individual from the species. A man's health depends on his relation to concrete individuals and to abstract individuals (which are states and nations) and the whole of civilization.

From this general description of the comparison of Adler's psycho-analytic system with the systems of Freud and Jung, it may appear that Adler is merely a moralist, just a philosopher, and his system looks dangerously like ethics or a scientifically well worked out scheme for religion. In the first case if this is so, then it is good. In the case that his background is really religious, that is also good. But actually Adler is a psycho-analyst in the utter, mysterious, and complex sense of the term. I will proceed to show what he has contributed to the new science. The absolute truth which is for Adler the central fact of existence, the truth that human beings are closely connected with each other, this fact for him is reality, just reality. We need not idealize it. There is no need to develop the fact of the unity of life, *it is*, whether one likes it or not, and we cannot increase it or decrease it. It is an absolute continuum in the sense in which the number Zero is utterly united with itself and indivisible. So human life is an absolute unity in this metaphysical

sense. Unity cannot be changed. The world is not in danger of disrupting and a universe cannot be increased or decreased. The fact of this unity is so throughout nature; animal creation is embedded with human creation, all are functions of each other. These facts of the cosmic whole and the indivisible human whole are facts which we cannot afford to ignore.

Human life does not consist in unity alone but also in the truly cosmic fact of strife. In the whole universe everything is in strife, in the organism of the animal creation itself there is constant strife, and the strife which we can find in nature and in the cosmos, this is comparable with human enmity. The strife which goes on, of one circle of life with another, the reality of which all individuals see in nature, does not strike us as a staggering fact. But the human race for supremacy, the human attempt to be better, richer, wiser, in short to be more powerful than the others, this fact of strife is for Adler a staggering fact. Sexual strife is only a small part of this universal strife, is only one of the facts.

This fact of absolute struggle, each against each, does not destroy the idea of unity. But the struggle for absolute supremacy against every other soul, although it does not break the unity, does break the meaning and value of human life. The meaning of life can be improved or destroyed. It can be improved by men who with their own free will strive to give meaning to life and construct social relationships out of the chaos of life. But there are also other people, those who have reached the limits of neurosis; suicides, criminals and the insane. And also, quite apart from these extreme types, there is a vast army, especially in modern civilization, of individuals who are neurotic in that they abstain from giving any value to life. Or they wish to give life a direction which they themselves invent. They put their own standards in place of a true meaning, they force their own neurotic ideals upon the community so that they break up, not the unity, but the meaning of life. Life becomes an absolute unity with no meaning, just maintaining itself. Life wishes to be where it is, it does not wish to increase or to diminish itself but only to keep its play going on.

So there exist, first, the fact of the unity of all life and second, a principle which does not exist, is not real but is felt. Life itself exists in the sense in which water or vegetables exist, but there is another kind of spiritual existence which is call ideas, phantasies, tendencies, dreams. So in phantasy, the unconscious, the Ego, has in itself the root of eternal diversity; anything can happen at any moment in this domain. It is the domain of pure fiction. It is merely ideas, hunger, need, those bare ideals which flow and

fluctuate. They are not made of substance or form and so do not depend on mathematical and logical laws. They have no laws and are irrational. They have their own proof and in that sense are above intellect and can stand against intellect. They are above good and evil in the sense that good and evil are only relative instruments to that phantasy.

There is a universal phantasy, which is the supremacy of difference, the supremacy of uniqueness, of expression. It is an irrational idea but it does move the world. Men do live *by* the continuum of life but not *for* the continuum of life always. Suicides, criminals, lunatics live for phantasy, for godlikeness. Men crave after expression, after measuring each other, to see who is the strongest, the most beautiful, wisest, the most daring, etc. The tendency of each man in the unconscious is to break life's unity. Most especially is this true of the neurotics. If possible the neurotics would really like to cancel the idea of godhead and would blot out the existence of every other Ego and then proceed to expand themselves infinitely. They would like to swallow all, the world, the universe, and once having guaranteed to themselves their omnipotence, they would begin to feel dull and bored. From this dullness they would not know what to do, and would immediately proceed to think how to create a universe over again. They would then find that their idea would be very like the universe that they had attempted to destroy.

Adler's sex, libido, life force is that impulse which combines two polarities into one. In the higher organism the process takes place by amalgamation and fusion of opposite sex cells. Once this takes place the process consists of immediately splitting that one organism into two. So that force, which either combines into one or splits into two, is for Adler, sexuality, provided we mean by this the inner consciousness of those cells and the unconscious goal and unconscious vision of those cells to maintain themselves. Power, the dynamic push, the will to overcome difficulties, strength of communication, push and pull, that idea of strength enters into the concept of the libido. Then comes the idea of the consciousness of the libido, of the libido's self-realization about itself. The life, the intelligence, is bent upon purposes in which it is powerful, and craves power. But power is not an end in itself, nor is bliss, nor consciousness, but only the unity of the libido with itself, apart from these three, which is so perfect that the whole reality is always perfect! In that sense of the true fourth principle, the Ego—in the middle of power, bliss, and consciousness—is the pure identity. It

is continually attaining its goal or having it endangered—and power, bliss or intelligence may grow or diminish—but its own reality remains unchangeable.

The central meaning of this libido is individuation of the individual. And in these individual centres of that universal continuum there is an urge. The eternal unchangeable libido fills these points with its own dream. The libido itself, being absolute, turns each one of those centres into a pseudo-absolute. They desire to become kings and saviours and to dominate society. They want power and godlikeness. This Adler takes to be the meaning and principle of differentiation. That craving for omnipotence, omniscience, bliss, expressing itself in religion, science, and art, all these cravings after godlikeness are not evil, and are the very reason that there are individuals. But when it happens that the power goal, that the phantasy of supremacy preponderates, life becomes, not broken, but its meaning and the meaning of civilisation is lost. Then there is a conflict in society and consequently in the individual himself.

Where is the root of the phantasy of this drive to superiority? Adler observes that the human race, considered as a mere animal organism in creation, is the weakest. Mankind out of all creation has the weakest nature with the greatest potentiality. He has achieved great things in science and built up civilisation. While a lion has its claws and its strength, man must invent instruments for his defence. While an eagle can manipulate its eye like a telescope, man must invent telescopes. Man, from that inferior position in nature, is compelled to strive, to invent strength, suppleness, glory, dress, etc., which Nature has not given him. Man must invent art in order to embellish himself. Civilisation was the defence against the tremendous superiority of the cosmic power. Mankind is weak and small and therefore as a race tries and must try to govern Nature by civilisation.

Mankind must give its own meaning to itself, must attain its own evidence about its own values. This fact of mutual existence Adler calls co-human reality. Man's duty in life is to give meaning to the functioning of this reality and to discharge it to the universal good. The feeling of inferiority, of prostration when confronted with the universe, is not only the chief intuition of the human race but it is also the chief feeling of every individual in childhood. A child's chief feeling is the feeling of impotence and his chief phantasy is the goal to become great. With children who are born with constitutional difficulties there is a real painful inferiority. Those children out of the clairvoyance of their organism about itself feel

their defects. The unconscious of the organism then transmits the fact of the defect, or the failure and the specific nature of that failure to the unconscious mind. For the real unconscious mind is the body, which is the organic consciousness. This consciousness urges the child to use phantasy to find instruments in the world with which to overcome that inferiority, to conquer the situation. The greater the feeling of inferiority and of a pathological defect by the individual, the greater is his desire for power. Criminals are those souls whose feeling of inferiority becomes intolerable to them in their clairvoyant intuition. They become convinced in their own intuition, and from a feeling of absolute anxiety wish to achieve a super-human life, to realise their will and cravings. As they cannot destroy the universe, they want to snatch supremacy in an indirect way and do so through crime. Their unconscious gets its way directly and not through their intellect.

Human organisms are infinitely various. There are, especially in psychic life, no types but only exceptions. Nevertheless each individual inherits the feeling of inferiority from the whole previous history of mankind. He has the feeling of original sin, of the misery of mankind clairvoyantly. First, man tries to conquer Nature and to become king of Nature. The universal tendency to crave the experience of bliss, omnipotence, omniscience becomes with each man definitely realized. Each man has little defects which are not discoverable to medicine but are visible to the intuition of the organism about itself; and according to that knowledge, visible to the organism in picture form, the man proceeds to make a picture of the very opposite in the unconscious. If he is defective in a particular organ or sense, then he desires to be greater than all in the very line of his inferiority.

This leads us to Adler's idea of world reform through education. What is his proposal? It is that the meaning of education ought to be fixed and for the first time scientifically ordered and expressed. The goal of education should be the universal need of all men, of all nations, especially of the future generations of mankind. The educational norm should be fixed in two specific points. The primary fact of life is the imperishable notion of the unity and oneness of all mankind. But on the other hand, there is the fact that all men crave after difference—they have the phantasy of their differences, all of which are rooted in the feeling of inferiority which is inherited constitutionally by the child and which is acquired early in his education, in family life and by social contact.

The reform of education, then, consists for Adler primarily in enlightening the teachers and organizers of universities about these

fundamental facts, the causes of the inferiority feeling in man and the antithetic fact of his striving for superiority. Religions, philosophies, sciences, should come to understand these truths in order to enable a new sense of security to grow. They should also be reformed, and interpret their own fundamental notions according to the wisdom of the doctors and of the physicians who understand the body as part of the soul, as a function of the soul. Adler's work consists in thus bringing together the physician and the psychologist.

Hunting the Abominable Snowman

Our "adventure story" this time takes the form of this report, supplied by Reuter's, of a Russian expedition to the Caucasus, which came on the trail of what might be "Abominable Snowmen". We are happy to note that our opposite number in the Soviet Union, Nauka i Religia ("Science and Religion") records the findings of this expedition, and we shall try to get in touch with them for any further news there may be from the expedition this summer. If there are escalations in scientific reporting [see editorial], there are also de-escalations, a priori scepticism about anything that does not fit in with a dominant view, especially if it is based on traditions of non-literate people. That tracks of the "snowmen" have been found not only in a special part of the Himalayas, but in an area of the Caucasus, may add plausibility to the stories about them.

The abominable snowman—the legendary man or beast that has also been called the Yeti in the Himalayas—really does exist, according to the leader of a Russian expedition to the Caucasus.

Mrs. Jeanne I. Kofman, who headed the expedition, described the snowmen as usually covered with red hair and larger than human beings.

She said they have sloping foreheads, small flattened noses and heavy, rounded chins. They live off fruit and vegetables and sometimes eat horse excrement, "probably for its mineral salts".

Mrs. Kofman reported in the latest issue of the magazine *Nauka i Religia* ("Science and Religion") findings made in the Kabardino-Olikaria area of the Caucasus.

Her article was accompanied by a photo of a footprint one and a half times larger than that of a man and said to be that of a snowman.

Mrs. Kofman said she talked to about 300 inhabitants of the area who gave evidence about the existence of snowmen. But she did not claim that she or other expedition members had actually seen any of the creatures.

They did find, she said, a place in high grass where two snowmen had slept, along with the remains of their meal. She described this as including two pumpkins, eight potatoes, sunflowers, berries, the cores of three apples and four round pieces of horse excrement.

Mrs. Kofman also told of examining ears of corn that had been nibbled by a snowman. She said the imprint of his bites showed they were made by larger-than-human jaws.

It was at this spot that the large footprints were found, Mrs. Kofman said.

Actual sightings of snowmen that she reported included one by 30 school pupils. They saw a girl snowman, who looked about 16 years of age.

A well-known figure in the area, according to her, is a tall, thin snowman with black hair. She said this "sets him off from the majority of his fellow-creatures, who are covered with red hair."

Then there is a large female who steals from village vegetable gardens.

Another snowman seen frequently is shorter and thickset. A watchman named Tsutsa Balagov watched this one run off in panic from a sunflower field after a gun was fired.

One of the major problems in learning more about the snowmen, she reported, is that the primitive villagers consider it tabu to talk about them and do so only very reluctantly.

The villagers think they are devils and set out milk and other food to appease them.

Mrs. Kofman, who has described her expeditions before a branch of the Soviet Academy of Science, said that gaps existed in knowledge accumulated about snowmen. But she expressed hope that future expeditions would clear these up.

Present evidence indicated snowmen had skulls "strikingly similar to those of the ancestors of man". But she did not claim they were a missing link. Mrs. Kofman indicated she expected to set out again this summer with a group of at least thirty.

Reviews

War and Vision

Two Leggings: the Making of a Crow Warrior, by Peter Nabokov. Thomas G. Crowell, New York, 1967. \$6.95.

The practice of "fasting for vision" was once almost universal among North American Indians for whom it might almost be said that a certain level of "mysticism" was an essential part of growing up. The term mysticism is here used broadly. The Indian based his life on a spiritual illumination beyond the ordinary conscious level of psychic experience. This illumination could probably not be called "supernatural" in a theological sense. (The possibility of supernatural charisma is of course not excluded.) The present article is not concerned with the religious content or value of the visions in themselves, but with the fact that such visions were taken for granted as a normal part of life in an archaic culture. They were an essential component in the concept of the mature human personality and hence they were to some extent institutionalized. For although the practice of fasting for vision was an entirely individual project, there was a prescribed ritual and the value of the vision was not decided on the individual's own judgement. The practical consequences of the vision, for good or for evil, could be quite momentous for the rest of the tribe. Hence the chiefs and elders passed judgement on the vision and its interpretation.

It can be said that the vision received after an initiatory period of fasting and solitude was decisive in giving the young Indian a place in the life of his warring and hunting tribe. An Indian without vision could hardly hope to be a great hunter and had no future in the military hierarchy of his people. But of course this was not determined entirely by one initiatory fast. Fasts and solitary retreats were multiplied throughout life and other "psychedelic" expedients were resorted to: ecstatic dancing, self torture, and drugs, which are now well-known, all might be called upon to stimulate the "vision" without which a well-integrated and purposeful existence could hardly be conceived. However, we must not generalize: the use of drugs was far less widespread than dances and fasts for vision.

The nature and content of the vision were not left entirely to chance. It was not just a matter of removing the block of everyday automatisms and the flowering of deeper psychic awareness, though

of course in the drug experiences the chemical properties of the drug, producing intense colour sensations and so forth, worked in the normal way.

The Indian who fasted for vision sought a personal encounter with a clearly recognizable spirit-friend, a protector whom he felt himself destined to meet, one to whom he felt himself providentially entrusted. This protector was not just any spirit. It was *his* spirit, his "vision person". And the encounter was not just a matter of seeing and knowing. It was not just "an experience". It changed the course of the seer's entire life : or rather it was what gave his life a "course" to begin with. The meeting, in vision, with "his spirit" set the young Indian upon his life's way. This was the true beginning of his destiny, because henceforth he would be protected, taught, guided, inspired by his vision person. However, guidance was not automatic. Protection and other forms of help could be completely withdrawn if the Indian was not careful, if he disobeyed, and if he was not extremely attentive to every hint or suggestion from his vision person. Such indications were given in dreams, or in the sudden, unexpected appearance of some animal who was the vision person's friend, or in some other event that somehow signaled the presence and concern of the vision person. Finally, of course, one could fast again, or hold a sun dance, for a renewal and clarification of the vision, a deeper encounter, a more intimate familiarity with one's vision person.

The Indian lived in life-long personal companionship with his guardian spirit, encountered usually in the first fast and vision which occurred at the entrance into manhood. He depended immediately and directly on the vision person, especially in his two chief occupations : hunting and war. The vision person gave signs when and where to hunt, where the bison were grazing, and above all he furnished crucially important clues to war strategy : when to plan a raid, when to go on the warpath and when not to, and so forth. However, the Indian was not left to deal with his vision person alone: the visions and indications required comment and approval from the more experienced men of the tribe, the elders, the medicine men and the chiefs. These were men of authority whose vision persons were very powerful and very friendly. Hence these Indians had a familiar and intimate knowledge of the whole world of the spirits. Indeed they could be assumed to have some acquaintance with the vision persons of others. At least they understood how the spirits usually functioned. In other words, they had a better and more accurate knowledge of the language of vision. The young Indian might interpret his vision in one way, and the elders might

proceed to show him that he was quite wrong. He remained free to disobey them and follow his own interpretation, but if he did he ran the risk of disaster. Obedience to his own vision person implied a healthy respect for the opinion of those who understood the spirits, and the elders were most severe in censuring young warriors who "disobeyed their vision person", misguided by passion, temper, ambition or impetuosity. Superstition and vain observance could also antagonize the vision person. One should not be too importunate, too fretful, or multiply too many ritual invocations. There was a right measure to be recognized in everything.

Communion with the vision person was ritually formalized through the use of a "medicine bundle", a little package of magic objects which had been assembled under the explicit direction of the vision person. The ingredients of the medicine bundle were usually fragments of animal skin, bone, rock or herbs : but all these objects were associated in some way or other with the vision person. They were things which he had used to demonstrate his friendly power and were normally revealed in a vision or dream. One prepared for battle or for the hunt with a ceremonious veneration of the vision person, by ritual prayers to the medicine bundle and perhaps also a little impromptu magic suitable to the occasion.

As may easily be guessed, the formalization of relations with the spirits through cult objects easily took the place of vision. Once a culture had passed its peak-vitality, one might expect the medicine bundle to become, in practice, more important than direct communion with the vision person. Then the medicine man became a kind of pharmacist of good luck charms rather than a discerner of spirits.

There is a certain fascination even in dry anthropological studies of Indian culture but there also exist living records of personal experience : the stories told by men who had fasted for vision and who had tried to follow the instructions of their vision person. When we read these stories, we realize that there was really a deep psychological validity to this way of life. It was by no means a mere concoction of superstitious fantasies and mythic explanations of realities that only science could eventually clarify. However one may choose to explain the fact, these stone age people had inherited an archaic wisdom which did somehow protect them against the dangers of a merely superficial, wilful and cerebral existence. It did somehow integrate their personality in such a way that the conscious mind was responsive to deep unconscious sources of awareness. Those who were most in contact with a powerful vision

person tended to have an almost phenomenal luck and dexterity in war or in the hunt.

However, we must not be too romantic about all this. There would be no point in merely idealizing primitive men and archaic culture. There is no such thing as a charismatic culture. Though the life of an Indian was much more individualistic than we have imagined, it was integrated in the culture of his tribe and in its complex rituals. "Vision" was perhaps more often a deepening of the common imagination than a real breakthrough of personal insight. Hence there is special interest in the biography of a Crow Indian visionary who, within the framework of this primitive culture and entirely devoted to its values, was a relative failure. Such a story was left by one of the last Crow warriors, Two Leggings, who died at an advanced age in 1923. The record of his conversations, taken down with an interpreter fifty years ago, has now been edited and set (as far as possible) in its accurate historic context, by Peter Nabokov. The book is one of the most fascinating autobiographies published in this century.

What strikes us immediately is the concept Two Leggings has of biography. What is man's life? It consists primarily in a series of visions. His life is his "medicine". His autobiography is in some sense a description of the way his medicine bundle was put together over the years. And the medicine bundle is a kind of concretization of his spiritual and warlike "career". For the most curious thing about Two Leggings is that he is by no means a pure mystic. He is also a career man, and apparently his misfortune was that—in our terms—he tried to make his mysticism serve his career. What we have here then is the life story of a shrewd and intrepid person trying to make his way to the top by a mystique and a magic of success. If we abstract from fasting, vision, and sun-dancing, we can easily translate the formula into a more modern and urban setting!

Within the framework of his cultural establishment, there was nothing unusual about a religious mystique of success. Two Leggings was a very ambitious young Indian, and he was determined to become a chief with the minimum of delay. He was tough, courageous, ruthless, single minded. He was not afraid of fasting or of intense hardship. He could go through the sun dance with all the prescribed tortures, the tearing of the flesh and everything. He followed all the approved formulas for fasting and vision. He sought out dangerous, almost inaccessible places. He fasted on the tops of cliffs. He refused to become tired, discouraged or scared. Even after companions had given up and gone home, he would keep

on fasting until he saw *something*. It might not be the top premium vision but at least it was something. When he finally established contact with a reasonably plausible vision person, and began to assemble his bundle, he had highly optimistic ideas of how high the vision person wanted him to go—and how fast. As a result he had some very narrow escapes from death and was not always able to come back to camp in a blaze of glory.

Two Leggings was not beyond faking some spirit-information and on one occasion he even got together a spurious bundle. That time he landed half dead in a creek where he was thrown by an angry bison. In the end, to make sure of having a really good medicine bundle, he purchased one from one of the elders who had the genuine goods. Unfortunately, Two Leggings never realized his ambition of becoming a chief. He never got beyond the rank of pipe-holder.

It is an unusually interesting book. The stories of the fasts, the visions, and the subsequent raids, the big bison hunts, the horse stealing forays and the missions of revenge are vividly told. But what is more important is that the psychological reality of the record comes through without static. Two Leggings was not sophisticated enough to be dishonest about his motives. He tells them as they were, frankly admitting that his ambition and impetuosity made him break the rules. He describes himself perhaps naïvely as a determined operator, working with the materials provided by his religious and cultural establishment. He was a man who wanted to count in his society. In order to be someone, he had to meet his vision person. He had to convince his vision person he meant business and then the person would let him in on the secret of a really powerful medicine. Having made himself a thoroughly reliable bundle he would get a lot of bison and a lot of scalps. Then he would be a chief and everyone would admit that his medicine was truly potent stuff. He would be a medicine man, and perhaps condescend to share out some of the proven exclusive ingredients with younger men on the way up. . . .

Two Leggings got a lot of scalps and a lot of bison, but that was about all. When other Indians of his time heard that his story was being taken down and was going to be put in a book, they said "Why *him*?" It is true, of course, that one of his visions informed him he would become known all over the earth. . . .

* * *

There is something pathetic about the life of Two Leggings. It

would be less pathetic, perhaps, if the visionary element were mere fantasy. But there was something spiritually and psychically authentic about the religious culture of the Indians. It helped them to adapt very well indeed to their stone age situation. Not only that, we must certainly recognize a universal psychic validity to the concept of encounter with a "vision person" (purely subjective if you like) as a protector and mentor in one's chosen way. After all, Catholics still believe (at least some of them) in Guardian Angels. There is also a universal pathos in the way a spiritual experience, once ritualized, formalized and fitted into a static establishment, tends to be manipulated by the ambitions of the believer. It then becomes self defeating. Vision, systematized and organized for the sake of personal or institutional aims, becomes blindness. And we all know the story of another kind of vision-person—one who was on good terms with Faust.

It may be true that Two Legging's medicine continued to work right up to the end. Perhaps he was right in thinking that the sight of a white blanket falling out of the sky led him to the place where he got his last scalp. But then there were so many other things the vision person did not tell him about. Two Leggings did not draw any conclusions from the fact that he followed his enemy along a brand new railway line, or that in the interval between the shooting and the scalping, he and his companions spent the rainy night in a section-house with some white railroad workers.

Up to the end the Crow Indians were so absorbed in their traditional view of things, their hereditary enmity with the Piegans and Sioux, that they joined the whites in order to fight the Sioux. For Two Leggings, this was merely incidental: it fitted in with his quantitative programme of scalps and bison. His vision person did not tell him anything about white men—probably because he himself was not interested. Elsewhere the Indians were seeing new things in visions. They were being told to drop their fighting among themselves, try to discover a new, pan-Indian identity, and protect themselves, if they could, against complete extinction. Already the bison were beginning to disappear. Already the Indians were being herded into reservations.

Two Leggings' vision person was silent about all this. Two Leggings did not inquire. The last lines of the book are sad and heavy with a meaning which this failed chief did not really see. He knew by now that raiding was forbidden, and that the white men might punish him for scalping that last enemy right by their railroad track. In fact he was summoned to Fort Custer, for an interview with the Commanding Officer.

I expected him to put me in prison, but I still went. When I entered his room he stood up to shake my hand and I felt better. He asked what had happened and after I had finished he said that enemies had stolen my horses and I had got them back, killing one of the thieves. He said I had done well. When he asked if I wanted something to eat I said yes and he went to a bureau and took out a coin. Saying he was my friend he told me to get something I liked. Again he shook my hand and I thanked him. When I got outside I looked at the strange gift. But when I went to the store and found all the things I could buy with the five dollar gold piece, I understood.

This was a new kind of medicine, and it was associated with a new kind of war : indeed with a whole new kind of world, and with a different notion or vision, of life, and of what made a human being important. In this new world there was no longer any place for an obsolete bison hunter and stone age warrior, nor was there any point in fasting for vision. In a very real sense he was deprived of his full identity. Contact with his spirit world was broken, because for him this contact depended entirely on a certain cultural context in which spirit-guidance gave meaning to his personal ambition. Two Leggings concludes his story—covering over thirty years in two and a half lines:

Nothing happened after that. We just lived. There were no more war parties, no capturing of horses from the Piegans and Sioux, no buffalo to hunt. There is nothing more to tell.

THOMAS MERTON.

An Unconscionable Time A-Dying.

Science and E.S.P. Edited by J. R. Smythies. Kegan Paul. Pp. viii + 306.

One or two “keep science safe” commentators have tried to create the situation where scientific interest in E.S.P. is dying, by loudly saying that it is. The organizers of *Science and E.S.P.* haven't seemed to realize, though, that an apology is due from them that their subject has been such an unconscionable time a-fitting in.

It is difficult for a reviewer of a book of essays that tries to summarize such a wide field as does *Science and E.S.P.*, to avoid praising those authors who bring to his notice facts he did not know and ideas he does not happen to have come across, while passing off as rather obvious those discussions that cover his own immediate fields of competence. All this, at least, is what I told myself—a physicist—when I found myself judging the articles relating to

physics to be much inferior to the rest. However, it is also possible that it is in trying to relate E.S.P. to physics that one comes most insistently against basic inadequacies in our contemporary conceptual framework.

John Smythies and Rosalind Heywood have got together an intensely readable and very informative set of essays on and around E.S.P. Necessarily, by their act of selection, and—for example—by getting John Beloff to provide a highly selective “Guide to the Experimental Evidence for E.S.P.” they have indicated a shape to the study of E.S.P. in a scientific setting. We may quarrel with this shape, but there the shape is, and it forces the reader to think out how, and why, he would have it different. There is some excellent comment on the place of extra-sensory perception in a wider intellectual picture, including Gilbert Murray’s Presidential Address to the Society of Psychical Research reprinted after fifteen years. Most of the essays, however, have titles of the form “E.S.P. and X” where X is some science, and one might have feared that such a shape would only be appropriate to a very well understood and conceptually simple subject. “Lasers and X”, “Government Research Funding and X”—. When, however, we do not even know whether E.S.P. signifies a mode of communication, the irruption of some transcendent being into the lives of men and animals, the operation of aspects of the psyche of which current psychology gives us no clue, the final demonstration that current concepts of space and time do not work for wide ranges of experience, or just the rump of causal nexuses that (a) we are unfamiliar with and that (b) have a “wowsky” flavour, we wonder if the “E.S.P. and X” shape is going to work. However it does work. Some sort of line emerges, and I doubt if—given the difficulty of their task—the organizers will mind too much if I describe its working as rough and ready.

From Aniela Jaffé’s “C. G. Jung and Parapsychology” Jung’s concept of *synchronicity* stands out as the kernel of Jung’s insight into the E.S.P. field. Jung defined “synchronicity” as “a coincidence in time of two or more causally unrelated events which have the same or similar meaning”. Aniela Jaffé observes: A “coincidence in time . . . refers to the inner image (dream, premonition, “hunch”, etc.) by which the past, present or future real fact is experienced as actually present, here and now . . . the “meaning” of the events is decisive. Synchronistic phenomena link facts that are not causally related and combine them into a meaningful experience”. The E.S.P. phenomenon—for Jung—establishes a primary relationship to which what would normally be accepted

as the causal relation or lack of relation is essentially irrelevant, or at any rate secondary. The play of symbolism that underlies this primary connexion that may be exhibited as E.S.P. is analysed in this same essay on Jung, and also by Emilio Servadio in "Psychoanalysis and Parapsychology". One wishes this topic could have been pursued at much greater length.

Related ideas do—it is true—play an important part too in Francis Huxley's "Anthropology and E.S.P." which is mainly a study of the symbolism of Voodoo in Haiti. Huxley admits to being uncertain how much evidence there is that E.S.P. ever really *has* to be invoked to explain the effects of the voodoo symbolism, but as he is himself feeling towards a synthesis of extra-sensory reference and symbol to provide the appropriate basic analytic concept for understanding such phenomena as voodoo possession, it is not surprising he has been unable to achieve complete clarity on the evidence relevant to the derivative concept—E.S.P. What is extremely refreshing in his approach, however, is that the truth or falsity of what the Haitians believe regarding the manner of operation of their practices (on the face of it many of them strongly paranormal) is a matter of deep concern to him, whereas anthropologists all too often affect indifference to such a question. (Leaving truth to the poor benighted native in this way is called "being objective" and is thought to make anthropology a proper science.)

The second suggestion inherent in Jung's synchronicity concept is that "ordinary" causal connexion may be secondary to that established by E.S.P. This idea provides the recurrent line of argument that I said existed not far below the surface through a great part of the book.

At the philosophical and logical end of this line, C. D. Broad ("The Nature of Precognition") conducts a fascinating piece of Sherlock Holmes work into what can, and more importantly what cannot, be meant by "pre-cognition"—particularly when the word is used strictly in the way suggested by its etymology. You wouldn't expect a *mistake* in such an argument by this author, but its very precision does throw into relief a *limitation* in its scope which is important. Broad's discussion is set in a universal time. That is to say he assumes (by default) that there exists a unique order for events in different causal sequences. Relativity has shown that whether such a universal order exists is an *empirical* question. It has shown this by demonstrating that for certain classes of events such an order cannot be defined. It is true that relativity theorists assume that *locally* a unique order exists, but a philosopher should take the point that their work lays open the possibility that even

locally (where the imagination boggles) simultaneity may sometimes not be definable over all classes of events. I reiterate, I am not questioning the validity of Broad's argument: I am stating a limitation of it. I should give an example. Broad challenges (p. 195) the believer in precognition to show—for example—"that it is intelligible to talk of the occurrence of an event X at t_1 being causally influenced by an event Y which had not then happened (and therefore was a mere future possibility), and did not happen (and so become actual) until t_2 ".

Upon this account, the impact of relativity is to show that it can only be an empirical fact about the world that it has meaning for Broad to speak of the times t_1 and t_2 *without specifying how the classes of events at those two times come to be enumerated*. But is it a fact at all? Perhaps the importance of Broad's analysis is that it forces those who are persuaded of the experimental validity of precognition to argue that it is not—quoting precognition as their evidence. Such a position moreover would seem to be necessary if one is to incorporate Jung's concept of synchronicity into any conceptual framework. As a second point arising from Jung's concept it is possible that synchronicity could be fitted within the scope of Broad's analysis, by questioning whether the events themselves, as distinct from their formation into equivalence classes under simultaneity, are really well-defined in a precognitive situation. If—as Jung claimed—the E.S.P. relationships between events are discernible only through a complicated analysis of the meanings of those events then there may be scope at this point for greater freedom than the analysis given by Broad allows. It may well be, too, that a combination of both lack in definition of local simultaneity and of meaningful event, occur, and complicate the precognitive relationship.

The line of argument now leads on to physics. Henry Margenau "E.S.P. in the Framework of Modern Science", discounts those interpretations of modern particle physics which might be taken as support for the idea that a unique time order is not always locally definable. His position is disconcerting since it is commonplace for physicists to discuss inversions of normal temporal order in high energy processes, and it would be surprising if what they appear to be talking about bore *no* relationship with what they really mean. Margenau's argument seems to depend upon a distinction he makes between "time as a conscious, protocol experience, the 'stream vector of consciousness' and time as a theoretical construct". "No physical theory" Margenau asserts "is qualified . . . to say anything about the

structure of subjective time. Physics deals with measured objective time, which means the construct”.

From this philosophy Margenau essays to deduce that the theoretical construct-time cannot be subject to reversal as anything more than a formal mathematical expedient or convenience since it has to be so related to conscious time, as to allow conscious time to move forward. It is difficult to see that this argument amounts to more than a forceful reassertion that physics is not allowed to be relevant to E.S.P., for if “conscious time” has nothing to do with what is meant by “time” in other contexts, then presumably the experience of conscious time consists only in the application of the principle that things are experienced in some order. But this is a logical, not an empirical, principle, and nothing whatever can be deduced from the fact that this order goes forwards. (For example if the order happened to go A, B, C, C, C, B, A—we should not say that the time had suddenly reversed, we should say that items were being repeated, thus making uniqueness of direction tautological).

Perhaps under constraint to make his physics fit his time philosophy, Margenau produces physical arguments too against taking time reversal seriously. Whatever his reason, however, his argument is surprisingly summary considering that he rejects the majority view of the time-reversal experiments. The crux of the matter is the interpretation of the formal equivalence of a particle going one way in time and the corresponding antiparticle going the other way, and Margenau merely reiterates his view that normal time progression is that corresponding to physical reality, without mentioning that this insistence will sometimes require as fantastically improbable a concatenation of circumstances as—say—the spontaneous coming together of the bits of a smashed vase when we run a film of its breaking backwards (in time, if you like).

In defence of Margenau it perhaps should be admitted that many physicists who blithely speak of time-reversal seem not to have considered the great conceptual difficulties in having temporal order defined differently for contiguous bits of the material world (“temporal order not locally defined” in my terminology). On the other hand we have the paradoxical situation that the relatively uncritical conventional physicist has been led to that very conclusion to which the facts of precognition strongly impel us, and it is therefore odd that Margenau—setting out to write about E.S.P.—should discount this confluence of thinking, even though to recognize it were inconsistent with his view of the nature of time. I suppose that Margenau would deny that he was doing more than eliciting clear thought about time, but I have already pointed out in my

comments on Broad's essay that what is at stake is an empirical—not an analytic—judgement about the temporal relationships of things in the world.

A scientist has to make broad estimates of what studies are fundamentally right—and what wrong—headed. My own estimate is that if precognition has once been verified beyond doubt then all physicalist theories or discussions of E.S.P. ought to be built round it as the general case, with simultaneous E.S.P. events as a special case. This estimate would not be justified if simultaneous telepathy and precognition were quite different sorts of phenomena, but the evidence is strongly against this being the case. (Consider the evaluation of Soal's experiments, for example, where the two sequences of guesses and targets can be imagined written on strips of paper and shifted past each other to see if any relative position gives correlation between contiguous guess and target symbols, thus placing simultaneous and precognitive guessing on an equal footing to start with).

Much of the physicalist discussion in "Science and E.S.P.", including all but the two brief paragraphs I have discussed in Margenau's essay, avoids the subject of precognition and seems to me for that reason off the beam. Vasiliev found he had to propitiate an oddly aligned materialism by devoting a very large part of his experimental efforts to essentially "off the beam" demonstrations that telepathic communication was not electromagnetic in nature, by using Faraday cages of progressively heavier materials. Perhaps there may be *some* reason to go on indefinitely doing such experiments and conducting analogously irrelevant theoretical arguments, but couldn't scientific research of this sort be left to be done in those countries where they have positively enormous quantities of lead and such stuff?

The editor, J. R. Smythies, puts himself in to open the batting and does indeed confront the fastest bowling by proposing a theory in which precognition is made the paradigm case of E.S.P. His method is to introduce a multidimensional space in which additional coordinates are added to the conventional four dimensional space-time for the precognitive connexions between events to exist in. The danger with such a theory is that it merely reformulates the problem which is to be solved (in this case the nature of the alleged precognitive connexion between events at different times) with some mathematical words added. Smythies' treatment falls into this class. Also Smythies' multidimensional framework carefully closes the door on every escape route from Broad's conclusion that precognition is impossible.

To make a multidimensional theory that did more than restate the original problem, it would be necessary firstly to make a list of all the factors that were necessary to specify a single event which we were hoping to imagine as a point in some multidimensional space a subset of whose dimensions are those of space and time. There is no *a priori* reason why any factor whatever should be excluded at this stage. Then—secondly—we have to select from among the total set of such factors a subset which we will take as the base vectors of the multidimensional space we are trying for. (Roughly this means we select variables to use as dimensions.) In a case mentioned in this book by Adrian Dobbs, for example, H. T. Flint took three position measures of a particle, one time measure of the particle, and the charge of the particle, as his set of base vectors. Now this choice of a set of base vectors from an indefinitely large set of factors clearly must not be an *arbitrary* choice if the superstructure to be built on the choice is to have cogency. Therefore there must be a very definite physical condition of some kind which the chosen set of factors that are to constitute base vectors have in common and which none of the other factors have. The exact operational specification of this condition will have to be at the heart of the theory that is then constructed.

Neither Smythies nor Dobbs (who also mentions an extra time dimension) justifies what he does by any such demonstration as I have outlined. Dobbs appeals to analogous theories of Eddington and Flint. In the case of Flint, whom I have just referred to, it is extremely doubtful whether, in his theory, an adequate physical justification is ever provided for selecting charge as a base vector. Eddington was extremely well aware of the need to make *his* extra dimensions physically comprehensible in the way I have described by basing them on some common property, and he devoted enormous labour and ingenuity to this attempt. He did not succeed, however, in anything like a sufficiently authoritative way for his theory to bear the weight of justifying a new methodology of time

TED BASTIN.

Speculating in Futures

The Biological Time Bomb, by G. Rattray Taylor. Thames & Hudson. Pp. 240. 35s.

In a complex technological society, the layman must rely on the specialist, not only to perform his specialized task adequately, but to bring before the public for discussion any developments in his

field which appear to be of important general interest. The responsibility of the specialist would seem, in fact, to extend further, to include the dispassionate presentation of arguments for and against any proposition he advances, and thereby to acquaint the layman with the issues involved. Unfortunately, most specialists are so attached to their specialties, that they never bring subjects forward for public discussion, or if they do, they give one-sided presentations. Mr. Gordon Rattray Taylor, a scientific journalist, has taken it upon himself in his new book, *The Biological Time Bomb*, to step into the gap between specialist and layman.

The book consists of examinations of several areas of current interest in biological research, in each case followed by Mr. Taylor's projections for various times in the not-so-distant future. These projections, some of which are blazoned forth on the dust jacket ("Test-tube babies? Postponing death? Mind control? The semi-artificial man? Brain without a body? Genetic warfare?"), so discourage Mr. Taylor that he is led to consider whether we ought to restrict the scope of biological research right now, in the interests of future generations. So gloomy is his outlook, in fact, that the final chapter is entitled "The Future, If Any". Certainly, if the language of the book is any guide, Mr. Taylor feels that the issue he raises is one of extreme importance, and that while he may not be the relevant specialist who should speak out, he is at least being responsible in setting the issue before the public. My own opinion, for reasons that I shall try to explain, is that both these contentions are rather severely weakened by the fact that Mr. Taylor is not the relevant specialist.

The first level on which the book can be criticized is that of technical competence. Certainly Mr. Taylor has attempted to cover a rather broad range of fields, and he can be forgiven some technical slips in each, but a disturbing number remain. For instance, on p. 162, the pairing of nucleotides in DNA is wrong, the correct pairings being A with T, and G with C, and on the same page yeast, a complex organism with mitochondria and chromosomes, is referred to as an enzyme. And Joshua Lederberg, who appears properly on p. 10 as a Professor of Genetics at Stanford University, is suddenly switched to the California Institute of Technology on p. 172. To harp on such minor errors may seem like nit-picking, especially since Taylor does seem to grasp the outlines of most experiments, but their existence indicates that the manuscript probably was not reviewed by a biologist, and this fact is significant when considering the reliability of Taylor's projections into the future.

Of more general importance is a second level of criticism which can be applied to the book : criticism of Taylor's ability to evaluate scientific information. Part of the everyday psychological currency of science, as essentially all scientists but very few of the general public know, is a rather marked scepticism about much of the material which appears in print in scientific journals. This scepticism is born of experience—usually the fault is that the conclusion of a paper is not fully warranted by the data because insufficient control experiments were done, or because equally valid explanations differing from the chosen one were not excluded, or, less frequently, because the observations are just not repeatable. Without the experience which teaches one how the experiments might have gone wrong, or what other explanations are likely, one runs the danger of ending up with an invalid conclusion. It is an unfortunate commentary on the publish-or-perish aspect of much of modern science that this is a danger which occurs very frequently, and one to which insufficiently advised scientific journalists are particularly prone. In fairness to Taylor, it should be said that with respect to this sort of criticism, his book is a mixed bag. In his discussion of gerontology (the science of ageing) he quite rightly takes it upon himself to conclude "that the subject is still in a pretty confused state". And his treatment of parabiosis (the sharing by two people of a common blood supply) is balanced, presenting both pros and cons in a way which reveals thought on his own part. Unfortunately, however, there are a considerably larger number of cases in which his critical abilities are short of the task. In two notable instances (planarian learning, pp. 135–136, and duck transformation, p. 166) he presents results which are now entirely discredited because they were not repeatable, acknowledges that the results were in fact not repeatable, and simply leaves the matter at that, as though the non-repeatability were only a minor detraction from the value of the results! In numerous other instances, particularly when the subject matter turns to things outside the layman's experience (such as studies of bacteria or viruses), his discussions are appallingly simple-minded and imprecise.

Mr. Taylor's lack of scientific experience shows up even more strongly in his predictions for the future, where the constraints of reality have been all but lifted. On occasion, his projections ring true, and he demonstrates that valuable sort of imagination which allows one to foresee several possible lines long which research might develop. I found his consideration of the legal issues surrounding artificial insemination and organ transplantation, for example, imaginative and amusing. But once again, his lack of

training in other fields leads him to the sort of wild speculation which it is common to find in an enthusiastic but not yet very well educated first-year graduate student. Such speculations demonstrate a degree of imagination, but they usually fail as bases for experimentation because they have forgotten to consider some important variable or other, or because they underestimate the difficulty of performing a critical step. For instance, Taylor really lets himself go when considering man-machine hybrids, or hybrids with functional parts from different species of animals. While these developments are, perhaps, eventual possibilities, the problems in achieving them, if in fact they are desired, can already be seen to be so great that it seems virtually certain that they are a concern for the far distant future only. Another development in the same class is cloning, by which large groups of genetically identical people might be derived. The obstacles to achieving this goal are truly immense.

One might justifiably argue that since predictions about the future involve no time constraint whatsoever, why object to predictions which are more distant than others? The answer is that Mr. Taylor takes insufficient pains to distinguish long-range from short-range predictions, and that it is precisely on the basis of his worry at some of the most long-range predictions that he considers restraining biological research now. It is particularly amusing to note the stylistic changes which accompany the transition from near-future to distant-future predictions—the verbs associated with events predicted in the near future tend to be “can”, “could”, “may”, and “might”, whereas those associated with more distant events are almost invariably “will”. Of course the range of possibilities considered is correspondingly reduced, despite the fact that the uncertainties must certainly multiply the farther we look ahead. Although there is a chronological table of predictions near the end of the book, the common abruptness with which Taylor moves from short-range to long-range predictions (often within the same paragraph) cannot help but leave the layman with a distorted view of what can be anticipated and when.

In favour of the book generally, it can be said that Mr. Taylor has an entertaining style, which will surely enhance the size of his audience, and that the book will undoubtedly contribute to discussion of the problems which it raises. Some of these problems, particularly the legal questions raised by transplant experiments and life-saving artificial organs, are in need of intelligent public discussion, but one comes away with the feeling that it should have been possible to raise the most relevant of these without throwing

in a lot of long-range bugaboos to boot. Perhaps biologists will realize that this is the price they must pay for failure to communicate themselves.

DICK RUSSELL.

Comment

Go East, Go West, Go East, Go West

“Go East, Young Man”, “Go West, Young Man” is a social attempt at living and as such it excludes the meaning of a life firmly rooted in the universe, in the experiencing of one’s self whilst at the same time sharing in something bigger than oneself. This is being alive in oneself in the reality of living for others.

Now if we are only partly-living and we desire to be fully-living, we may be tempted, as so many are, to become a part of a dependency culture, such as the one that is now exposing itself in the sub-culture of drug dependency. Within such a setting a partly-living person become momentarily real in the reality of an exhilarating sensation, feeling terribly alive while it lasts. Life is meaningful until the *come-down* and the *horrors* of partly-living make themselves known. Within such an experience ordinary living becomes an impossibility, as the gift of the so-called high periods gives way to the dread of a-loneness, of a-partness, of non-being. Hence man becomes addicted to his addiction of partly-living.

I would suggest we have two basic types of drug dependent persons, those like the writer of “Go East, Young Man” experiment through an honest intellectualising in the search for a “way out” of the personal problems of an impersonal society. The others are in full flight from personal and family chaos. Together they express the impersonality of humanity, the non-communicativeness of man to man. The real sin of today is non-communication especially when the facilities for communication abound. Within such situations one either sits and dreams eastward, or one Rip van Winkles one’s life, in a form of non-life.

Is this because the West appears not to want to know the person, as this prevents the growth of the machine, the computerized age? It is now more profitable to ignore man as a *personal person* and to use him as a commodity. At the heart of drug dependency lies the very humanity of the personal rebelling through the herd instinct of a drug dependency culture. It is, I suggest, man “crying in the wilderness” of a so-called personalistic society, it is a cry for life, “man, let me be man”.

This man’s becoming impersonal through his institutions, especially in the Western Hemisphere, is greatly responsible for the

flight East and beyond into the West. The Church as one of the great institutions of the West has, it would appear, forgotten her role as the humaniser of man; that she is meant to retain the *flesh-ness* of the word made flesh. The gift of conscience forces the de-personalized and structurized man to fly east, west, north and south, anywhere to escape the vacuum, the void of a mechanistic society, forgetting that we, like the machine, are a part of the evolving creativeness of God. The arm of creativeness has been severed from its body through the secularizing of the sacralized world.

The *personal* in the addict needs to be communicated with; what he is saying needs to be understood. Is the jab of a fix into his veins a jab into the lifeline of humanity? Is it better to hurt myself than another member of society? The battle for the personal goes on; who am I, what am I, where do I belong? Will you, can you, accept me in my non-acceptance of you, thus enabling me to search for the wholeness of "me"? In the search for wholeness, in my basic search for the *truth* that is me, the "truth" of my life is the knowledge of what human beings really are, and of what makes them what they are. It is a kind of truth discovered through living with other people. Other people become my truth in the openness of sharing all that is me. It is the alive-ness of life lived to the full.

The drug dependency problem with its overriding social question is a social disease, whether or not the sufferings of the eastward turning, or the non-turning addict are a part of the birth pangs of a larger process, the regeneration of the west, of the man who flies eastward, to meet the man flying westward. Is it an evolutionary phenomenon in man's attempt to become fully man through the agony of manhood's adolescence? This whole problem is surely a crisis of communication between the inner and the outer self, between the individual and society, between the mechanistic and the personalist society, between faith and non-faith. We need, and are no doubt searching for, a *cosmic* faith containing within it the truth of the east and the west. The truth that is my life must be revealed through my security in you.

Thank you for a stimulating article,

W. J. A. KIRKPATRICK, S.R.N., R.M.N.

Nurse-in-Charge,

The Treatment Centre,

St. Clement's Hospital (The London),

London, E.3.

Sentences

From the Sermon preached by Gilbert Burnet at the funeral of the Hon. Robert Boyle, on January 7, 1691/2, at St. Martin's-in-the-Fields.*

Ecclesiastes II, 26: "For God giveth to a man that is good in his sight wisdom, knowledge, and joy"

This is the truly good man in God's sight, who does not act a part, or put on a mask; who is not for some time in a constraint, till the design is compast, for which he put himself under that force; but is truly and uniformly good, and is really a better man in secret than even he appears to be: since all his designs and projects are worthy and great. . . .

The first of (the happy consequences of goodness) is Wisdom . . . the forming of true principles, the laying good schemes, the employing proper instruments, and the choosing fit seasons for doing the best and noblest things that can arise out of human nature. . . . There are also particular happy flights and bright minutes, which open to men great landskips and give them a fuller prospect of things, which do often arise out of no previous meditations, or chain of thought, and these are flashes of light from its eternal source, which do often break in upon pure minds. They are not Enthusiasms, nor extravagant pretensions, but true views of things that appear so plain and simple, that when they come to be examined, it may justly be thought that anyone could have fallen upon them, and the simplest are always the likeliest to be the truest. In short, a pure mind is both better prepared for an enlightening from above, and more capable of receiving it; the natural strength of mind is awakened as well as recollected: false biasses are removed; and let prophane minds laugh as much as they please, there is a secret commerce between God and the souls of good men. They feel the influence of Heaven and become both the wiser and the better for them. . . .

Knowledge comes next: this is that which opens the mind and fills it with great notions . . . (Knowledge) makes (a man) become thereby another kind of creature than otherwise he could ever have been: he has a larger size of soul, and vaster thoughts, that can measure the Spheres and enter into the theories of heavenly bodies; that can

* Robert Boyle is known to most people for "Boyle's Law"; he was a founder of modern chemistry. Bishop Burnet was an early member of the Royal Society, and a personal friend of Boyle's.

observe the proportion of lines and numbers, the composition and mixture of the several sorts of beings. . . .

The third gift that God bestows on the good man is Joy. . . . He rejoices in God when he sees so many of the hidden beauties of his works, the wonderful fitness and contrivance, the curious disposition, and the vast usefulness of them to the general good of the whole. . . . If this (joy) at any time goes so far as to make him a little too well pleased with the discoveries he has made, and perhaps too nicely jealous of the honour of having done these services to the world, even this which is the chief and most observed defect, that is much magnified by the ill-natured censurers of great men, who must fix on it because they can find nothing else, yet I say even this shows the fulness of joy which wisdom and knowledge bring to good minds.

NOTES ON CONTRIBUTORS

Amy Clarke graduated from Newnham College, Cambridge, in classics. She was Senior Classical Mistress at Cheltenham Ladies' College, and is now retired and researching into the poetry of Claudian (Late fourth century A.D.). Author of *The Universal Character of Christianity* (Faber, 1950), *A History of Cheltenham Ladies College, 1853–1953* (Faber 1953), and various volumes of poetry between 1922 and 1962.

Andrew Rawlinson was an English scholar at Pembroke College, Cambridge, and graduated in Moral Science. He designed the concrete poem on the first number of *Theoria to Theory*. He has recently been learning about Sant Mat at its centre in India.

William H. C. Frend was at Keble College, Oxford, and is now Fellow of Gonville and Caius College, Cambridge, and University Lecturer in Church History and History of Doctrine. During the war he was in the Cabinet Offices and political intelligence. Author of *The Donatist Church* (1952); *Martyrdom and Persecution in the Early Church* (1965); *The Early Church* (1965); and Editor of *The Modern Churchman*. He has just given the Birkbeck Lectures in Cambridge on "The Monophysite Empire".

Sir Alister Hardy is Professor Emeritus of Zoology in the University of Oxford, and was formerly Regius Professor of Natural History in the University of Aberdeen. His Gifford Lectures, *The Living Stream* and *The Divine Flame*, were given in Aberdeen in 1963–5. Other principal publications are *The Open Sea; Part I, The World of Plankton; Part II Fish and Fisheries*.

Dick Russell was at Harvard University, and took his Ph.D. at the California Institute of Technology. He is at present on leave from Cornell University as a post-doctoral fellow in molecular biology at Cambridge.

Thomas Merton read modern languages at Clare College, Cambridge and did graduate work at Columbia University. He joined the Cistercian (Trappist) Order, and is at the Abbey of Gethsemani, Kentucky. He has written an autobiography, *Elected Silence* and a number of books on the contemplative life, including *Seeds of Contemplation*, *Waters of Silence*, *Mystics and Zen*.

Ted Bastin, sometime Research Fellow of King's College, Cambridge, is Principal Investigator U.S. Air Force project in Information Systems; has done work on the Theory of Solids, and been Isaac Newton student in the University of Cambridge.

Alan Russell, who designed the cover, read French and German at Jesus College, Cambridge, and now teaches in Stepney.



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