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EDITORIAL NOTE

The idea for this Journal has come from the graduate students of the Sub-Faculty of Anthropology at Oxford: in particular from those at the Institute of Social Anthropology. Papers given at graduate seminars and preliminary ideas arising from work for Diplomas and higher Degrees, very often merit wider circulation and discussion, without necessarily being ready for formal publication in professional journals. There is a need for some intermediate form of exchange. The Oxford University Anthropological Society has agreed to act as publisher for this venture and has established a Journal Sub-Committee for this purpose. We would like to express our thanks to the University Clubs Sub-Committee for its grant of £50 to the Society.

We shall produce one issue per term. Articles will be welcomed from students in social and other branches of anthropology and from people in other disciplines interested in social anthropology. Letters, comments and reviews will also be welcome. For the present, it is preferred that the main emphasis should be on analytical discussion rather than on description or ethnography.

We have been extremely pleased by the interest shown in the Journal so far. With sales now exceeding 250 copies per issue, we are approaching financial soundness. There are, however, still a number of back issues unsold. Those wishing to purchase any should write to the Editors enclosing 14p for Vol.I, no.1., 20p for Vol.I, No.2., and 20p for Vol.I, No.3, (plus 2p for postage).

FORMAT

Papers should be as short as is necessary to get the point over. As a general rule, they should not exceed 5,000 words. For future issues, papers should be submitted following the conventions for citations, notes and references used in the ASA monographs. Communications should be addressed to the Editors at the Oxford University Institute of Social Anthropology, 51 Banbury Road, Oxford.

A PREFACE TO THEOLOGY

The mistake is to say that there is anything that meaning something consists in. Wittgenstein, Zettel, n.16.

Some preliminary remarks may be in order. By 'theology' in what follows is understood primarily Christian theology, though it is recognized that there are more or less legitimate derived uses of this term in connection with non-Christian religions. There are also more or less independent uses of the term, clearly so in Aristotle, say, to refer to some activity conceived of as in principle rational in its sources and in its practice - 'philosophical theology'; the relation between Christian theology and philosophical theology is problematic, and will only be glanced at here.

It should also be remarked that even within Christianity the term 'theology' or its Greek and Latin equivalents have had different uses. There has been a tendency in Greek Christianity to reserve the term 'theology' to reflection on God as 'three-in-one', and to use the term 'economy' for reflection on the Incarnation within the providential plan. Although St Thomas Aquinas in the thirteenth century wrote a Summa Theologiae, he speaks in the first, methodological, question of this work rather of sacra doctrina, sacred teaching, than of theologia. However, it is convenient, and in accordance with current usage, to speak of theology when referring to the historically very various ways in which Christians have reflected on the whole meaning of what they accept in faith as a revelation granted them and in principle not accessible to reflection without this revelation. This is an ideal or technical use of the word 'theology', which, while it remains related to historical uses of the word, already adopts a perspective which selects for consideration a specified activity of Christians, regarding it as in some sense typical of and intrinsic to historical Christianity, even though this activity might not historically have been called 'theology'.

A third preliminary remark is more doubtfully in order, but may be desirable in view of the audience to which these reflections are addressed. I should like to make it clear that these reflections are intended themselves to be theological in the sense indicated, that is, as extending a tradition of reflection on the whole meaning of Christian revelation, and hence representing a typically Christian activity, however various the forms historically taken by this activity. Clearly the tradition, and representation of it, may be differently conceived even today. Historically, and even today, Christian tradition has been conceived of in different and divergent ways. However, it is, I think, true to say that today all the historically divergent Christian traditions have become aware of their limitations, and in particular of the limitations of what, within the traditions, has been conceived of as typically theological activity. Thus while I should make it clear that the reflections offered here are not in any historical sense (including, then, the contemporary scene) necessarily representative of any of the Christian traditions, the aim of the reflections is to sketch a version of theological activity which could be accepted by all Christian traditions as 'representative' in some prospective sense of what, from this discovered or invented point of view, might be seen retrospectively as typically Christian theology. To 'extend the tradition' in this way would be to re-unite, by proposing a new type, what have hitherto been conceived of as divergent. It has been extremely stimulating to embark on these reflections for an audience which, by assumption, is non-theological (and could very well be non-Christian), since it has forced me to attempt to offer an account of theology which

could take its place without too much embarrassment among accounts of other kinds of studies today. I ask here to be forgiven if in order to establish some kind of communication I blunder clumsily into areas of discussion for which I lack professional competence.

It will be convenient to begin with a remark made some years ago by Claude Levi-Strauss to the French philosopher Paul Ricoeur, in the course of a discussion printed in the review Esprit (1):

In your article you claim that La pensée sauvage makes a choice for syntax against semantics; as far as I am concerned there is no such choice. There is no such choice because the phonological revolution that you have invoked on several occasions consists of the discovery that meaning (sens) is always the result of a combination of elements which are not themselves significant. Consequently, what you are looking for ... is a meaning of meaning (un sens du sens), a meaning behind meaning: whereas in my perspective meaning is never the primary phenomenon; meaning is always reducible. In other words, behind all meaning there is a non-meaning (non-sens), while the reverse is not the case. As far as I am concerned, significance (signification) is always phenomenal.

It is of no special concern to me whether Levi-Strauss would still describe his position in the same way; what remains interesting is the opposition he discerns between, on the one hand, a view of meaning for which any instance of articulate meaning arises out of a prior, not necessarily articulate, source of meaning which as source is 'pregnantly' meaningful - a 'meaning of meaning' - and on the other, a view (his own) for which meaning is a product of a structured combination of non-meaningful elements and is sustained by that structure alone. (I recognize that the opposition tends to seem even more abrupt expressed in terms of 'meaning' than in terms of 'sens', but again this does not deprive the remark of its interest as exemplary locus).

Now to pursue all the implications of this opposition would take me much further than I would care to go at the moment; but some fairly superficial observations may perhaps be made. The view which Levi-Strauss describes as his own depends of course on ideas of theoretical linguistics which have become in some ways increasingly fashionable as they have also in some ways become increasingly sophisticated. Writing in 1968, Chomsky describes amusingly the euphoria of the 1950's when it seemed that 'mathematics, technology, and behavioristic linguistics and psychology were converging on a point of view that was very simple, very clear, and fully adequate to provide a basic understanding of what tradition had left shrouded in mystery' (2). Even quite recently what would seem to be at best purely decorative allusions to 'information theory' and 'codes' appear in the writings of distinguished British scholars (3), and this in spite of reiterated warnings from professionals of information theory (4). The move in the direction of increased sophistication may be characterized by way of Chomsky's distinction of the two different levels of syntactic analysis, the level of 'surface structure' and the level of 'deep structure', the one generated from the other by complex transformations. Whether this distinction is so considerable an innovation as Chomsky claims is open to doubt; what remains clear is that structure remains the primary explanatory concept (5).

Three observations of decreasing generality may be made here.

(a) 'Structure' seems to have become the paradigm for meaning in general throughout an increasingly wide range of investigations today; it is interesting that the word occurs in the title of Kuhn's Structure of Scientific Revolutions, to which I was alluding in my use of the word 'paradigm'. It seems as though it is no longer

possible to characterize the search for explanation, the pursuit of meaning, except in terms of 'structure', as though one were held captive by the language of 'structure'. We may compare Wittgenstein (Philosophical Investigations I, n.115): 'A picture held us captive. And we could not get outside it, for it lay in our language and language seemed to repeat it to us inexorably'. The Bild which held him captive was precisely picturing, something very close to 'structure'; so it is fascinating to find David Pears, in his recent book in the Fontana Modern Masters series, describe (inexorably) Wittgenstein's philosophy in both periods as an attempt 'to understand the structure and limits of thought' (p.12), in what seems to be the hendiadys 'structure and limits' (four times in this paragraph). And yet, if anything is plain in Wittgenstein's later philosophy, it is that limits need not be structured (6). For structures are in principle capable of being 'mapped', and the later Wittgenstein's 'limits' of language are only ever provisional boundaries, capable of indefinite expansion and contraction. How shall I say what it is I can't say except by saying it? Of course one can always try to show that what has been said, especially by philosophers, was mistaken in typical ways: A prison with rubber walls might be even more intolerable than one with rigid walls - but 'prison' would be the wrong metaphor, and stretching can be a member of a group of transformations formalized in mathematics.

(b) It is of course in mathematics that the paradigm of 'structure' finds its clearest expression, that 'new mathematics' which seems now to be provoking a minor political crisis in France (7). But whereas mathematicians themselves can be aware of the problems arising from the nature of formal systems (8), it seems possible in linguistics for exponents of 'transformational grammars' to embark on elaborate procedures of formalization in which it is difficult to decide which is more extraordinary, the triviality of the results or the naivety of the presuppositions. I shall support this rash attack by only a single instance (9). In his own essay on 'Generative Syntax' in the Penguin Now Horizons in Linguistics (1970), the editor, Professor John Lyons, the author of another Modern Masters book on Chomsky and of a substantial Introduction to Linguistic Theory, expands a formalization of lexical entries associated with a formalization of syntactic properties as follows (p.136):

These entries may be read as 'the lexical item sincerity is an uncountable, abstract noun' and 'the lexical item boy is a countable, common, animate, human noun'.

Now I must in a simple-minded way protest that no procedure of formalization on earth is going to persuade me to describe a noun as 'human'. More formally, if a system of formalization requires me, in order to make sense of one of its rules (not, certainly, of one of the propositions it generates), to lapse into a piece of non-formal muddle (Ah well, I don't really mean "human" in the ordinary sense'), then there is something fundamentally wrong with the formal system (10).

(c) As this example shows, 'semantics' in this kind of treatment is specified in dependence on 'syntax', so that Ricoeur's appeal to a priority of semantics to syntax can be made to seem merely a technical alternative, and as such to be technically rejected. But what is odder still is that the formalized transformations which are said to exhibit the passage from 'deep structure' to 'surface structure' appear to be envisaged, by Chomsky, at least, as mental operations, psychological processes, and that linguistic 'competence' consists in the ability to perform these operations (cf. Chomsky, op.cit., ch.2.). Now Chomsky's notion of 'competence', the native speaker's capacity to generate and understand an infinite number

of sentences in his own language, seems to be of fundamental importance. It was his recognition of it which led him to the distinction between 'deep structure' and 'surface structure'; what is more than dubious is whether 'competence' needs to be tied to notions of 'structure' at all.

What is at issue here, and brings us back to our point of departure, is whether 'structure' is not an undue restriction of notions of 'order' and 'context', which may in fact be given interpretations of a non-formal kind, such that 'meaning' is not held to be exclusively supported by 'structure' but to issue from a source of meaning, the 'meaning of meaning' (11). For Ricoeur, in the essay mentioned earlier, this source of meaning is not the 'myth' but something prior to it both chronologically and in principle: the 'symbol', which is 'over-determined' with potential meanings; and it is the function of 'hermeneutic' to recover and renew this primary and primordial meaning by expounding it as a meaning for the expositor and his contemporaries.

Now it must be admitted that Ricoeur's notion of 'symbol' is a rather romantic one, although he is aware of the need for 'structure' (or preferably context) in order that symbolism may disclose meaning. While he has written a major philosophical interpretation of Freud (12), he relies unduly on writers like Eliade for his view of symbols as somehow lying about charged with revelatory meaning, awaiting a sympathetic expositor, though again he is certainly aware of the function of (some) literature and art in generating meaning from symbols (13).

The point of all the foregoing discussion, both prolix and cursory, has been to indicate the possibility of a third alternative, for which meaning is not primarily either the resultant of a structured combination of non-meaningful elements, or a symbolic concretion in some absolute beginning, but primarily a non-formal, non-structured 'competence', which is the 'generating' source of both structure and symbol, and which remains irreducibly 'mysterious' (cf. Chomsky's remark above). On this view, the 'meaning of meaning' is a competence: the ability, capacity, power, actively to mean, the quick of human spontaneity.

How is it possible to support such a view argumentatively? Clearly it has been presented in this paper dialectically, by the choice (with particular audience in mind) of a convenient truce offering an opposition of two views, which have then been reconciled in a 'higher unity' by manifest sleight of hand; I assume that the (relative) quickness of the hand has not deceived the eye. I should want to appeal to the later Wittgenstein for support; hence the remark impressionistically cited at the beginning of the paper. But the appeal to Wittgenstein itself would require substantiation of a sort which I would not care to try to offer here. It would involve interpreting Wittgenstein in a context which is neither his own, nor (still less) the context of current English philosophy, which probably owes more to Austin than to Wittgenstein himself. Wittgenstein himself is 'argumentative' in a distinctive way, in which the drift is more significant than the sequence, the printed words frequently demand an accompanying aimed performance, provisional instances are exhibited only to be collapsed. Nevertheless, as much on the basis of the experience of Wittgenstein's last year of lecturing at Cambridge as of the printed writings, I should want to claim that his later philosophy is a disclosure of mind in action, of 'mind' as an indefinitely fluid activity of meaning, where 'mastery of a language' is not a merely private affair, but involves membership of a linguistic community, so that the 'mystery' of competence, the mean-ing of meaning, is a sharing in the reciprocal world of human communication (14).

And after all, my purpose here is to sketch a version of meaning in theology; so anyone who wishes may read all the foregoing as 'background', an evocation of different styles of pursuit of meaning, against or alongside which the pursuit of meaning in theology might emerge more persuasively.

Thus abruptly, I pass now to the problem of meaning in theology. The writings collected in what is called the New Testament, whatever else they do or are, provide evidence that different groups of people claimed to share an experience of inner transformation, and that this claim was stated, in very various ways, in terms of an interpretation of the way in which a man Jesus, having lived and died and been himself transformed, continued to play an original part in their lives. On the basis of this formulation, we may make the following remarks.

(a) The intrinsic unity of the New Testament writings is an implication of the historical judgment, or series of judgments made over a considerable period of time (hundreds of years in some cases) by the successors of the first Christian communities, that these writings, and no others, were and are authentic witnesses to an experience both unique and universally available, shared by the first Christian communities in their diversity and by their successors in their even greater diversity. The unity of the New Testament writings is only superficially and inconsistently an historically empirical datum; their significant unity is provided only by the perspective of the experience.

(b) By 'experience' is not primarily meant a 'feeling', but a recognition of a radical change of life as a consequence of acceptance of an invitation to change (to 'turn', 'be converted'); hence not so much like a pain but rather like 'Now I see...' (the solution to a problem, say). A typical New Testament expression for the experience, subjectively (individually and communally) considered, is 'faith'; more commonly, perhaps, the experience is registered by statements (of all sorts, narratives, for instance) about the relational term of faith, the one inviting, Jesus. ('Jesus' is primarily the name for the subject of a human history at the beginning of our era).

(c) These statements of all sorts about Jesus are an interpretation of his significance. As answers to the question, 'Who (what) is Jesus?', they envisage him in a variety of contexts of interpretation, available in the Palestinian-Hellenistic-Jewish environment of the time. The primary context of interpretation is clearly the traditions of Israel, documented in Hebrew and Greek literature (the Old Testament). These traditions were themselves complex, and at the time of the New Testament writings include apocalyptic reinterpretations of the older traditions (as in the Qumran documents) and reinterpretations assimilating Hellenistic philosophy (as in Philo of Alexandria). The New Testament writings use these and other traditions, reinterpreting them so as to interpret the significance of Jesus; the primary horizon of interpretation, what claims and demands interpretation, das Zu-Denkende, was and is the significance of Jesus; the traditions were and are reinterpreted in the service of that primary effort of interpretation. 'Now I see! What do I see?'

(d) All the traditions reinterpreted by the New Testament writers included a view of 'God' or at least 'the divine', and some of the traditions included a view of the cosmos; all of them took for granted that God and cosmos were real. Consequently the Christian reinterpretations in their turn were 'theo-logical', cosmological, and ontological, in different ways and with varying degrees of explicitness. They were also, in view of the dominant Old Testament context, intrinsically historical in their form:

Jesus was the 'fulfilment' of a 'promise'. All Christian theologies since the time of the New Testament writings have continued to exhibit these characteristics in varying degrees; in the nineteenth century (some might say earlier) there began the process of adapting the ontological language of early Christianity in such a way that it could become a language of 'experience' in a subjective sense, and more recently some Christian theology has claimed to be non-theological, proclaiming the death of God in the wake of Nietzsche's Zarathustra of awaiting a God of the future who has still to become himself fully.

The responsible practice of theology involves, then, the acceptance, in the perspective of faith, of the New Testament writings, with their claim to reinterpret the Israelite traditions (the Old Testament writings); and it involves acceptance of the New Testament writings as a uniquely privileged exemplar of how to reinterpret any tradition in order to interpret Jesus as Christ and Lord - historically, theo-logically, cosmologically and ontologically.

This theological activity of interpretation and reinterpretation depends on a single presupposition with two aspects. (a) The theologian as believer belongs to a community of believers; it is a presupposition of the faith of the believing community that its faith is the same faith as that of the first Christian communities, in spite of manifest historical discontinuities. (b) This faith must be not only subjectively (individually or communally) common to believers now and in the beginning; it must also be concerned with the same object, open to the same horizon, the significance of the one Jesus.

The theological presupposition is only a particular version of the presupposition on which all interpretation of texts depends (15). This general presupposition is simply that author and interpreter of the text share a common humanity. On the one hand this implies that author and interpreter share in that human competence which is the generation of meaning; on the other, it implies that the 'subject' of the text, its horizon or Worlaufhin, is the meaning of what it is to be human. It seems no great step to holding that this presupposition holds good not only for texts, but also for any determinate way of life.

Naturally this 'mysterious' shared human community is also presupposed by theological interpretation. In fact - and this is the last step to be taken here - theological interpretation of Jesus in faith needs ultimately to maintain not only that it relies on the general presupposition of shared humanity and that it further particularizes it by introducing the shared condition of faith; theological interpretation needs to maintain that its particular version is the necessary particularization of the general version, such that the shared condition of faith and the significance of Jesus define intrinsically - 'realize' and 'fulfil' - the character and scope of shared humanity in general. Theology would then consist in the unending task of making this claim plausible.

Cornelius Ernst .

Notes and References

1. Novembre 1963, pp. 528-53. I have used the translation in New Left Review 62, July-August 1970. Quotation from (French) p. 537, (English) p. 64. In a later issue of New Left Review, Ricoeur is referred to in a footnote as Catholic; as it happens, he is a member of the French Reformed Church. Ricoeur's article 'Structure et herméneutique', referred to by Lévi-Strauss, was printed in the same issue of Esprit, and has been reprinted in Ricoeur's collection, Le conflit des interprétations (1969).

2. Language and Mind, p.3.
3. For example, V.W.Turner, The Drums of Affliction (1968), Introduction, following Leach.
4. For example, Colin Cherry, On Human Communication, first edition 1957, second edition 1966. The misprint of the diagram on p.115 of The Savage Wind (1966) may perhaps seem even more innocent when it is further noticed that the English version has replaced Lévi-Strauss's ' \neq ' sign (mathematically, 'not equal to'; La pensée sauvage, p.152) for disjunctive boundaries by a '+' sign.
5. J.Piaget, as well as surveying mathematics and the natural and human sciences in his small book Le structuralisme (1968), has also edited a substantial volume of the Encyclopédie de la Pléiade, Logique et connaissance scientifique (1967), adding comments from the point of view of 'genetic epistemology'. Piaget's babies (Auden) have grown up.
6. Perhaps I may be allowed to refer here to my own now rather antiquated lecture to a foreign audience, 'Words, Facts and God', Blackfriars July-August 1963, pp.292-306.
7. Any reader who, like myself, is not a professional mathematician, will find both an excellent tool and an instructive piece of evidence in a text put out by a body calling itself 'The Centre for Structural Communication', meant for use in sixth forms and by first-year University students: Basic Ideas of Abstract Mathematics (1969), by R.M.Fyfe and D.Woodrow. The topics discussed are the standard ones: Sets, Mappings, Vectors, Matrices, Groups, Boolean Algebra, Rings and Fields; the basic vocabulary of 'structuralism'.
8. A fairly elementary account, in historical sequence, in C.W. Kilmister, Language, Logic and Mathematics (1967). P.F.Strawson's account of the relationship between the formal systems of logic and ordinary language, Introduction to Logical Theory (1952), remains a classic.
9. Readers are invited to consider whether they share the assumptions held to govern linguistic theory by the editors, J.A.Fodor and J.J.Katz, of the influential collection, The Structure of Language (1964), pp.5-6.
10. Mr. M.A.E. Dummett, Reader in the Philosophy of Mathematics in this University, has been kind enough to tell me that I am being neither obscurantist nor simply stupid in my views of this kind of theoretical linguistics, though he must certainly not be held to support these views himself.
11. The phrase needs to be rescued from its associations with that tedious piece of neo-Benthamite rationalism, a classic, no doubt, in its way, The Meaning of Meaning, by C.K.Ogden and I.A.Richards.
12. Now in English, Freud and Philosophy (1970).
13. He has a good phrase in a later essay about 'language on fêre', Le conflit, p.97, and has written a remarkable study of symbols of evil (as part of a 'phenomenology of the will'), now translated as The Symbolism of Evil (1967). Mary Douglas's Purity and Danger may serve as a fundamental critique of this book.
14. It would be instructive to compare Wittgenstein's notion of 'following a rule', using the references on p.30 of A Wittgenstein Workbook (1970), by Christopher Coope et al., with Chomsky's 'On the Notion "Rule of Grammar"', in Fodor and Katz, pp.119-36. For an excellent example of how the later Wittgenstein and the later

Heidegger can be allowed to illuminate each other, see the rather inaccessible article by F.Kerr (of Blackfriars), 'Language as Hermeneutic in the Later Wittgenstein', Tijdschrift voor Filosofie (Louvain) 27 (1965), pp.491-520.

15. An essential piece in the recent development of theological hermeneutic is R.Bultmann's essay, 'The Problem of Hermeneutics', translated in Essays 1955 (German original 1950), so too the article by G.Ebeling, Hermeneutik, in Die Religion in Geschichte und Gegenwart III³ (1959), col.242-62. The fundamental treatment of philosophical hermeneutic is by H.G.Gadamer, Wahrheit und Methode (2 ed. 1965). An article by Karl-Otto Apel, which treats of Dilthey, Wittgenstein, Heidegger, Winch, is now separately published in English, Analytic Philosophy of Language and the Geisteswissenschaften (Dordrecht-Holland 1967). It may be interesting to recall that Bultmann's essay is put to good use by R.D.Laing in his study of schizophrenia, The Divided Self.

SYMBOLIC COLOUR: VICTOR TURNER REASSESSED.

This paper examines the importance of colour as a means by which the Ndembu express their ideas of their society and their perception of the world around them in symbolic language. Victor Turner's analysis of Ndembu colour symbols has been recognised as a basis for the study of colour symbols in general, and in fact for the study of different symbols both between and within cultures (Tambiah 1968, Hallpike 1969). This paper will attempt to reassess Turner on the basis of his own ethnographic material and to construct a different approach to the study of the colour symbolism of the Ndembu.

Turner (1966) starts by referring to the present revival of interest in dualism; the left and the right hand, and other symbolic dyads. He then introduces the three colours which by a complicated argument he interprets as representing or symbolising three 'basio' bodily biological products. These are, semen/milk (white), blood (red) and exoreta (black). We have here a triadic system: three being the basio family unit (man, woman and child) the three basic bodily products and the three colours. It is not this triadic scheme that I wish directly to consider, but rather Turner's interpretation of colour.

Three colours are used by the Ndembu in the context of ritual: white, red and black. "At the apex of the total symbolic system of the Ndembu is the colour triad, white-red-black. At certain esoteric episodes in the boys' circumcision ritual and in the initial ritual of the men's and women's funerary associations of Mung'ong'i and Chiwilli the meanings of these three colours are taught to young Ndembu". (Turner 1965:90). We must start here with the Ndembu interpretation, and see what underlying motives prompt them to use these colours; why they are interpreted the way they are by the Ndembu and whether from this basis we can postulate any univocal definition of colour symbols.

Turner lays out the meanings of the colours as the Ndembu are taught them. White has twenty three interpretations, red seven and black eight. (Turner 1966:58-61). I shall not repeat all these in detail but give a synopsis.

In an earlier paper Turner wrote of the colour white: "The concept of whiteness (is) a complex one, for it includes qualities (goodness, strength), virtues (generosity, remembrance of one's ancestors), the rewards of virtue (freedom from fears and mockery, fertility, living to a ripe old age), relationships (between ancestors and living political superiors and inferiors) and states (life, old age)" (1962a:142). Notice that white is not linked to solid objects, but is a concept; white and whiteness are ideals. Black is similar and stands for blackness; it has conceptual associations with badness, unluckiness, witchcraft, disease etc.. Red, however, is very different. It is not abstract; red things are not ideals, "red things are of blood or of red clay" (1966:59).

Red has different meanings, unlike black and white which are each directed towards one idea. White and black are emphatic in their respective meanings and are also the antithesis of each other, "Red things belong to two categories, they act both for good and ill, these are combined" (1966:60). Red also "seems to share the qualities of both white and black" (1966:64). Red is thus a link between white (goodness/order) on the one hand, and black (badness/disorder) on the other. Unlike white and black, which each have single conceptual meanings and constitute single colours, red, which has various

gradations of meanings between the concepts of black and white, is a variety of shades of red. It encompasses a spectrum of red tinges ranging from white on the one side to black on the other. I have attempted to represent this variation diagrammatically (diagram 1).

"Red things have power" (1966:60) and power itself is a very ambivalent property. Power can be directed negatively (towards blackness) or positively (towards whiteness).

I think Turner begins to realise that red is not just one colour, but a spectrum of shades when he says "the blood of menstruation and murder is therefore 'bad' blood and is connected by the Ndembu with blackness" (1966:68) and "sorcerers and witches.....are people with black livers" (1966:69). Blood and livers are red, but menstrual blood, dried blood and the colour of livers are nearest black in colour. In an earlier paper Turner made this even clearer when he said the Ndembu "say that the blood of healthy people is 'clean and white', and the blood that is attacked by disease is 'bad' or 'black' (1962a:147-148). Elsewhere Turner wrote "some diseases, in addition to being 'black' also have a 'red' lethal character" (1967:304). Red is near goodness and order (white) because semen, which is considered a form of blood is classed in the category red although it is white (I shall return to this point later). White and black are emphatic symbols for the Ndembu, they are positive and negative and can be arranged "in a series of antithetical pairs, as for example: goodness/badness; purity/lacking purity; lacking bad luck/lacking luck" etc. (1966:64). Yet the colours themselves as well as in their meanings have this emphatic relationship and antithesis. White and black as colours are complete opposites; they cannot really, as colours, be variable, as red can. There are many shades of red ranging from brightness (near white) to darkness (near black). White is white, mixed with any other colour it takes the shade of that colour; black is black and darkens another colour. So, by their very nature white and black have only very little variation in colour and thus only single meanings, while red in colour and meaning can, if required, span various gradations.

This then is how the Ndembu see the colours in the context of initiation; white and black as emphatic, red as being like both of them. But what do these colours really mean, and why are they used as symbols during ritual? If they are symbols they must be expressing something, but what and why?

Turner probably starts to look for the answer to these questions in biological symbols firstly because the Ndembu say red things are of blood, and secondly because of the significance of the milk tree as a symbol linked to the colour white. Red is important because of the link it has with blood; blood is important in hunting ceremonies and feared in the form of menstrual blood and blood spilt in homicide. White in some ceremonies is linked with the milk tree of which Turner says "The milk tree is the place of all mothers of the lineage. It represents the ancestress of women and men" (1964:22). The milk tree is associated with lactation. So Turner looks for bodily functions in the underlying symbolism of the colours. Red is blood and because of the different forms of blood it has different meanings; white for Turner is represented by milk and semen and the black is associated with excreta. How black becomes excreta is not made clear in Turner's text but black had to be linked to some function. For Turner then, all the colours represent "products of the human body" (1966:80).

But are we limited to semen, milk, blood and excretase bodily products? What of sweat and tears, are they not basic bodily products also? Urine also has been left out of the argument, though we shall see it has specific connections. It is not immediately apparent that all excreta are black, or that blood, apart from menstrual blood which

is restricted to certain age groups of women, is part of the natural bodily function of waste disposal. Is not blood part of the body, part of the living substance of life and its spilling accidental, not a biological necessity? Writing of a medicine called Chikwata which is said to have large thorns Turner says "A man's body stays well if he is caught by them. They catch him strongly so that his blood inside him stays strong"(1967:191 my emphasis). The colour red for the Ndembu represents all kinds of blood and things associated with blood including semen. "Semen is white....good blood"(1966:60) and 'blood whitened (or purified) by water'(1966:53), so blood can be classed by degrees of purity of which semen is the most pure kind. Semen is not classed by the Ndembu directly with white but with red, though semen is said to be near whiteness in concept but still within the category red. Urine is the liquid which purifies semen and adds to it "according to the Ndembu belief, semen is 'blood mixed with water'"(1967:201). Turner needs to tell us far more about how the bodily functions are supposed to work for the Ndembu especially in the relation between lactation, whiteness, women and the concept of matrilineality and semen, urine and blood (in hunting, witchcraft etc.) and the position of men and their part in reproduction. It is worth noting, however, that of the two bodily functions explicitly mentioned by the Ndembu in relation to the colour triad, blood and semen (with urine) are both classed with the colour red. White and black have no such relationship explicitly with any bodily objects but only with abstract ideas or refined substances.

What is important is that red is linked with down to earth objects—the substances of life, blood and semen. Blood is something with which the Ndembu are in contact everyday in hunting, menstrual avoidances and of course as a substance of themselves of health and of strength. Semen is the produce of new life, the begetter of children, the strength of the society and its ultimate health and survival. But blood has both good and bad associations. Red is for the Ndembu the colour of the living. It is what they are themselves—good and bad. What is more it is how they are in their world and how the world is to them. "Red things have power; blood is power for a man....must have blood or it will die"(1966:60).

Semen is the good side of man, pure blood. Semen is such pure blood that it has nearly achieved whiteness: "red semen is ineffective or impotent, it cannot penetrate fully"(1966:60). The Makonde have a similar belief: "A woman conceives through the semen of a man. If the man has black semen there will be no bearing of a child. But if he has white semen he will have a child"(Harries 1944 quoted by Turner 1966:55). Whiteness is what the Ndembu strive for, it is the ultimate ideal, but they themselves are in reality red, of blood and created by semen. The Ndembu, by linking white and red are emphasising the facts of life that they are red and what is ideally to be achieved is white. Writing of one tribe in Madagascar Leib stated that when a child has its first hair out the natives also "make a red cap with white bands for the child. 'Red' is the symbol of the power of life, 'white' the hope which shall guide him on his way"(1946:33) ³. We might also postulate that if white is linked to lactation in certain circumstances lactation supports the child, guides him to adulthood and helps in the continuance of the system. Black is the evil side of man and because it exists this too must be expressed as the ultimate in the opposite direction to white, if only as an example. The reason why white and red are expressed more forcibly is because even if blackness does exist there is no reason why it should be given the same emphasis—indeed there are many more definitions of whiteness than blackness; black is "the neglected member of the triad"(1966:70).

I think the Ndembu everyday in their lives recognise the difference between good and evil, that men themselves in varying

degrees contain the will or power to be both yet somehow neither can be totally controlled to bring about either complete whiteness or blackness⁴. Chihamba, a very important cult to the Ndembu, is itself a paradox. Men kill the white spirit which is all the goodness of their world. Thus the initiates, who re-enact the killing, are faced absolutely with the basic contradictions of their world and life (Turner 1962b).

I have still not explained why the colours are significant in initiation. I agree with Turner (1968) when he considers rituals, especially initiation, as the concentration of ideas (and therefore the concentration of symbols). What the symbols represent, however, must be lasting, not just significant during the ceremony; what they show must be of use outside the ritual context, even if the association with the symbol is less important. Turner says of the colours in relation to initiation: "thus red may be a persistent motive in hunting rites among the Ndembu, and white in rites dealing with lactation or village ancestral shades. But at the initiation of juniors into the rights and duties and values of seniors all three colours receive equal emphasis" (1966:80 my emphasis). Have the three colours the same meaning when applied to the individual rites? Surely what we are dealing with here is the relationship between three colours, three symbols in one incident, that of initiation. In the girls' puberty rites there might be a link between white and lactation; the muddy tree stands for the milk and milk in this circumstance for whiteness. In initiation, however, it is the three which are used in a relationship with each other to show something. White need not mean or signify the same object in initiation as it did in another ceremony for here the three colours white, red and black are used together.

Turner would have been well advised to consult Reichards' findings in studying colour symbolism among the Navaho. She reports: "Colour, an outstanding symbol in Navaho ceremonialism, is especially significant in combination.....No colour or sequence runs through a single chant consistently; none has the same meaning in every setting, nor does chance account for apparent exceptions to the rules; every detail is calculated. If there seems to be a variation it is for (a) cause" (1950:187). Reichard goes on to give a warning to those studying colour symbolism: "The problems posed should be born in mind by all who collect material....(on colour symbolism)...colours have meaning according to their position in a complex, the order being as significant as the colour itself. The colours are few, the permutations many" (1950:214-215)⁵.

It is important that the Ndembu novices are taught the meanings of the colours, that the ideas are expressed in relation to social experiences. The linking of red to blood and semen brings the symbolic meaning down to concrete terms. The Ndembu are taught to associate the colours in cultural and social terms, not explicitly in terms of biological experiences. The symbolic meaning of the colour triad lies at the social level of control, but at the same time because of psychological associations colour may have a double meaning. It is, however, impossible to separate clearly individual associations from cultural influences in the interpretation of colour. This is what Turner tries to do, he looks for conscious and unconscious meanings in the colours in relation to the psychological changes which are supposed to occur in initiation. But do the association of the colours with biological functions exist before or after initiation if they exist at all? Is initiation the means by which men control biological urges or biological functions by transforming them into social categories? Surely initiation is a directive and not so much a limiting experience, and in being directive it must not create complexes but control them. Initiation involves the drawing of a line between childhood and adulthood.

The controlling of biological signals by symbolic acts in toilet training must be completed early in a child's life.⁶ The type of control and teaching outlined to initiates seems far more to be involved with the rights of adulthood such as sexual teaching, rather than in relation to other experiences (Turner 1967). Many other things are also taught to the initiates.

Initiation is into a new world, the world of adults, the world as it really is beyond childhood. The novices must be shown and given a set of ideals, values and standards, not only to control their psycho-biological experiences but more important a method of social perception to control the inherent nature of their worlds and the other people within it. The control of cognition is thus achieved by a variety of symbols and the three colours together I believe help to show how those worlds are and to indicate the acceptable mode of action. I believe this is the point Turner should have stressed, not an underlying motive, if it exists at all.

I have spent a large part of this paper on re-analysing the meaning of the colours for the Ndembu mainly because I believe Turner to be wrong and that he has directed analysis onto the wrong lines. Later in the paper Turner tries to put his concepts on a wider footing by cross-cultural comparison. But even in the examples he chooses there are often more than three colours and the interpretation of the colours varies. Space does not here permit me to show how widely the interpretations of colours vary both within and between cultures. Turner's analysis shows clearly how dangerous the bonding of ethnography to fit pre-conceived ideas and a wide cross cultural comparison on limited evidence can be, not only to the original data but also to those who attempt to follow his example. Too often anthropologists attempt to explain facts in their own sociological and psychological models, often creating complicated secondary symbols. This I feel is what Turner has done with colours; a forest of symbols can so easily become a jungle.

The totality of Turner's paper leads others to follow his example. Hallpike starts his paper on social hair by stating: "Meanings constantly recur. For example as Turner (1966) has pointed out black, white and red are colours most often used in ritual... .. Given then, that there is a number of symbols with a common signification in different cultures, I will try to explain the basis of this similarity". (1969:256). But is it 'given'? I would certainly contest this statement for even within Ndembu ritual the 'signification' varies. Similarities of meanings may occur between cultures, but only because some cultures have similar patterns and the number of associations that can occur are ultimately limited.⁸

It must be remembered that Turner emphasised an idea which was easily used by other ethnographers in considering their field-work: the importance of colours in ritual contexts. As Turner was and perhaps is the accepted expert on the analysis of symbols his definition was readily adopted.⁹ But instead of considering the nature of the colours themselves and their relation to the context of initiation as well as to 'values, rites and duties' of the initiates, he went on to look for underlying meanings. Meanings which prompted one reviewer who has an interest in psychological anthropology, to say they were based upon a "kind of psychological speculation that was popular in the nineteenth century" and to be so provoked as to write: "it is curious that social anthropology... .. finds it easy to return to the nineteenth century for its models of psychological and historical research" (Wallace 1968:393). The message is clear: if one does not fully understand the implications of putting forward home-brewed theories involving psychology one should not attempt to do so.

What I object to, however, is that like many such statements in

anthropology today, Turner has left us with a legacy in which all colours in ritual must be associated with bodily functions and substances in triadic patterns. No doubt Turner is a brilliant ethnographer, his vast volumes on the Ndembu are proof of this, but by so deeply fixing a general rule in the facts of the Ndembu any argument against this rule must also be against those facts. Only Turner, besides the people themselves (and one has doubts sometimes whether they ever know), knows the Ndembu; we only know them through his works...

Tambiah is a good example of how limiting Turner's analysis is. In analyzing Trobriand colour symbolism Tambiah found three colours, red, white and black, but was unable to use Turner's ideas about their conscious or unconscious meaning. "The reader may wish to relate the significance of Trobriand colour symbolism to the assertions and hypothesis made by Turner (1966)...unlike the Ndembu, red for the Trobrianders does not appear to be an ambivalent colour. They do not hunt nor do they fear menstrual blood". (1968:205). Tambiah fully realised the symbolic significance of colour but could not agree with Turner's analysis and instead of questioning his ideas further he merely left the reader to come to his own conclusions. I must admit I have heard many discussions about the symbolic meanings of colour and Turner's argument is usually scorned, but no one has as yet analysed his approach in writing. I think the answer to this lies in the point about the idea being so neatly interwoven with Ndembu material.

By adding other considerations overlooked by Turner some general points become apparent which must always be born in mind when considering colour symbolism. To be used and applied in ritual and other contexts, the colours have first to be refined into a substance. The Ndembu we are told use powdered clay for red and white and charcoal for the colour black and these are used in the ritual. Thus the colours are refined from a raw state and the use of colour may be restricted to the level of technology and the availability of appropriate substances. I do not know how many colours the Ndembu can refine from natural sources but Bühler states: "A large number of primitive peoples rely largely on mineral substances which limits them to white, black and yellow-brown red...natural environment, the presence of certain raw materials, and the level of technical knowledge are thus a frequent source of limitation to the use of colour" (1962:3).

We must also consider how colours are defined linguistically. When colours are defined linguistically by other cultures they need not follow a western pattern of division, thus "it becomes clear there is no such specific universal concept of colour". (Hollander 1966:92).¹⁰ Early writers tended to confuse the ability of people to define colours linguistically with the ability to define them physically.¹¹ This has now been proved to be nearly totally incorrect; however, certain shades of colours are sometimes indistinguishable in nearness of shades. Among the Hamar, colours are divided into four categories, black, white, red and green, within those categories all other colours are to be found. "All color terms can be reduced to one of these four, but none of the four is reducible" (Conklin 1955:342). Thus red for the Ndembu, which I think is a variety of shades of red, is still, linguistically called just red. The type of blood it represents indicated the variation in shade. In fact Turner says: "the colours white, red and black... are the only colours for which the Ndembu possess primary terms. Terms for other colours are either derivatives from those.... or consist of descriptive and metaphorical phrases" (1966:48)¹² (my emphasis).

Neither Turner nor myself have answered some of the deeper implications as to exactly why some objects and acts are specifically

chosen to be symbols and to convey meanings rather than by using other methods like language, myth or riddles. I believe the answer to this problem lies in the nature of colour itself and its importance in the perception of the world; symbolic colours are always found in combination with similar symbols or specific actions. In Ndombu ritual this is especially apparent in the associations the colours have with other sensory symbols; heat and cold, wet and dry and the use of liquids in opposition to the dry powder forms of medicines. Those I believe are potent symbols for they rely on the human senses combined with linguistic meanings and specific actions to convey messages. Elsewhere I have examined in a wider context the relation between such symbols, perception and the quest for meaning" (Urry n.d.).

At the end of his paper Turner wrote: "I am going to throw caution to the winds...for the sake of stimulating controversy" (1966: 80) and then placed before us cross cultural and universal rules for the interpretation of colour symbolism. I have not only disagreed with these rules but also with Turner's initial basis for the argument, his interpretation of colour for the Ndombu I hope, however, that my criticism has been constructive and that Professor Turner will accept them in the spirit of his challenge; a challenge no one else has, as yet, found controversial enough to question.

James Urry .

Notes.

1. I would like to thank all those who assisted me in the construction of these ideas. I am especially grateful to Mr. Bruce Tappor and Dr. P.J. Uoko. Professor I.M. Lewis also commented on the paper and saved me from grammatical and logical errors. They are, of course in no way responsible for any of the opinions expressed which are purely my own.
2. It is strange how often red things are compared with power and danger in other cultures. This may be due to the vividness of the colour itself in the total natural landscape of colours surrounding man. It may also be due in part to its ambiguous association with substances which as Mary Douglas has pointed out often leads to a concept of power and danger (1966).
3. Boidelman (1964) has pointed out that white beads are given to a child among the Kaguru to express attractiveness and moral stability as well as social, moral and developmental features for the child's welfare.
4. The New England puritans had somewhat similar concepts. Not only did they dress in black and white, but they tended to see everything in terms of this emphatic difference. Men were not red, good and bad; they were either all good, white (and puritan) or all black and bad (other people). It has been shown how this attitude of seeing things in terms of black and white has influenced certain authors and poets whose upbringing was influenced by these Puritan principles.
5. Actually Turner in a number of papers admits that the meaning of symbols change within a ritual context, he calls this the 'positional' explanation of the symbol and also in different ceremonies the meaning can again change. By contrast his paper on colour symbolism argues universal interpretations; if the meanings vary for the Ndombu then surely they vary cross-culturally.
6. Turner does not, as far as I can find out, say anything about Ndombu child training in regard to these biological signals. I have checked the literature from similar people in the same area and find that most of this kind of training has been accomplished by at least thirty months.
7. As Durkheim said, social facts cannot be studied out of context or without outlining the context first: "facts which come from different societies cannot be profitably compared merely because they seem to resemble each other What errors have not been committed for having neglected this precept! It is thus that facts have been unduly

connected with each other which, in spite of exterior resemblances, really have neither the same sense nor the same importance" (1968:94). Certainly Turner has appeared to have neglected this precept. Symbols must always be considered in the circumstances in which they are used and if detached take on a false meaning. Thus we find Lévi-Strauss writing: "in China...white is the colour of mourning and red the colour of marriage" (1966:65). White is not the colour of mourning nor red the colour of marriage; white means something in mourning ceremonies as red has specific connotations in marriage. Just because a colour is used in a ceremony does not mean it represents that ceremony.

8. Hallpike is, however, considering a much narrower field of analysis and is more specific as to how and when hair is used and for what purposes.

9. Some authors tend to ignore Turner completely (Beck 1969); some find his statements do not fit their specific data (Lamphere 1969), while Boidelman (1968) suggests that Willis would have been better to have followed Turner's kind of analysis when dealing with colour symbolism in another paper. Whether Boidelman meant he was to follow Turner's example in emphasis or by example is not exactly clear.

10. For an early paper on colour vision see Rivers (1901) and for a paper outlining the various linguistic differences in relation to field work see Hollandor (1966). Whitely (1966) also points out some ideas relating to linguistic categories of colour and concepts of meaning.

11. This point has, I believe, been recently challenged by Brent and Kay (1969).

12. A point must be made here about the colour yellow which is not defined linguistically but is often ritually equivalent to red (Turner 1966:48). The association with red appears only to be on the ground of impurity. When the maternal milk is either yellowish or reddish it is said to be impure (Turner 1969:59). The discoloured milk becomes linked with ideas of witchcraft, and witchcraft is conceived, as we have seen, within the colour red.

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white and whiteness			black and blackness		
very good		good	bad (evil)	very bad	
semen	hunting blood	parturition blood	circumcision blood	blood of sorcery murder	menstruation blood
pure blood	fresh (food)	birth (new members of line (masculinity) -age)	soiled blood	anti-social	directed against good
manhood			unclean (menstrual)		
towards order			towards disorder		
power positively directed			power negatively directed		
white	rich	clean	unclean	dirty	soiled
red	red	red	red	red	red

Diagram 1. Analysis of red to the Ndembu.

ANTHROPOLOGY AND THE PHILOSOPHY OF SCIENCE.

Naivety and Exposure

No one will seriously contend that it is possible today to be a 'Renaissance man'. At the same time social anthropology gains nothing by its practitioners being uneducated. But if some regard the specialization which has accompanied the tremendous increase in knowledge as a necessary evil, 'Closed Systems and Open Minds' suggests another view (see Gluckman ed:1964). Although associated particularly with the Manchester school, the naivety thesis advocated in this book represents the outlook of many of the older generation in our discipline, and it is a view which has had severe consequences.

For Gluckman, genuine understanding stems from specialization. This requires that we delimit a field for an academic discipline. Social anthropology has its problems and its way of dealing with them. We are to be naive about other fields of academic endeavour; that is, we can work with simple assumptions about the nature of other disciplines. The premise of naivety, then, creates ignorance to the status of a methodological virtue. Now, firstly, to say that a discipline has its problems is to presume a great deal of agreement on the part of its practitioners as to what it is they ought to be doing. Not only is this not required for a healthy branch of scholarship, it may be positively harmful. If anthropology is what anthropologists do, it is clear that the interests of its individual scholars will form at most, family likenesses in which there need be no constants. In this sense the idea that a subject has an essential nature would not be true. As to the harmful effects of being over-eager to define a discipline, one need only quote from Fortes' inaugural lecture at Cambridge. He suggests that with the functional theory we now have a sound empirical science having eliminated conjecture and history. He rejects as no more than stumbling blocks to clear thinking the approaches of an older and far more scholarly tradition than that of which he is a part. Social anthropology, he goes on, is now 'able to recognize itself, once for all, as a separate discipline concerned with 'mechanism and function' (Fortes 1953: 24).

No comment on this is surely required. He would have us, it seems, work for ever with one model of society and confine our attention only to the problems which this functional view generates. Whilst these problems may be worth attention, the functional framework fails even to formulate satisfactorily others which are equally our province and perhaps more important. This is not to say there need be no shared assumptions as to the general territory of a discipline, but a definition of the type that Fortes suggests which effectively freezes thought can only have a negative value.

What is of special significance here, however, is the idea that anthropology is now a separate discipline. I suggest the pedagogic-institutional position of our subject is quite unimportant. To take it seriously produces a sterile concern for questions of relations between disciplines. Presumably individuals will read wherever their interests take them. To suggest that the relationship between sociology and anthropology is, or ought to be, such and such would seem to lack meaning.

On this issue, it is the contention of Gluckman that we must close off a conceptual system and work with simplified versions of other disciplines. (Murdock in 1951 picked out precisely this indifference to other fields of scholarship as a basic weakness in British social anthropology-and it is clearly evident, among other places, in a whole list of works on substantive economics stemming

from Malinowski). But the naivety thesis would virtually eliminate one of the chief sources of theoretical advance which might be called convergence phenomena. Advances in knowledge seem to proceed sideways as often as forwards, as can be seen from the construction of new sciences precisely from the borderline areas between existing disciplines. Gluckman suggests as taboo thought at these pedagogic margins, effectively ruling out the possibility of this type of progress.

To demonstrate the consequences of such an attitude, the ASA conference of 1964 which resulted in The Structural Study of Myth and Totemism (Leach ed: 1967) is rather valuable. It shows that we must not remain ignorant of developments in other disciplines or cut ourselves off from the insights they afford, that there are hazards involved in conceiving anthropology as a separate discipline with its own problems and its own special approach. Agreement on the nature of a discipline, when it is combined with naivety leads to intellectual inbreeding and a degeneration in thought. 'Only when there is sufficient variety (in a population) it is ensured that there are always individuals available with characteristics suitable to meet the changes that occur in the environment'. (Young: 1960: 147). The population in this example is British social anthropologists and the changing environment is the realisation in French anthropology of the tremendous value of structural linguistics in providing a method of tackling our own material.

Linguistics had virtually disappeared in British anthropology, although learning a language of course survived as a necessary part of fieldwork. Its value, then, was seen only as pragmatic, and in 1960 there was no ASA member (see Ardener E&S: 1965) whose declared main interest was in language as such. Thus when Lévi-Strauss demonstrated the value of the structural approach to myth, we were, for the most part, at a loss intelligently to evaluate the analysis. Leach was quite right in his introduction to the ASA volume to point out that its main value was an exposure of the prejudices of the contributors towards this French sage. Lévi-Strauss had first published his approach as early as 1955 in the *Journal of American Folklore*, yet in 1964 a discussion of his work is strikingly lacking in competence.

Such a community has produced its critics, but those who have been most noisily appalled, for instance Jarvis, have not distinguished themselves in their critiques. There was so much to be attacked in current anthropological practice, but in 'The Revolution in Anthropology' (Jarvis: 1964) we are offered ill-informed comments from which our discipline can derive no benefit. For instance, blindly to follow Popper in rejecting what is assumed to be a Baconian view of science, providing no evidence, either textual or bibliographical, of having read any Bacon, is exactly the lack of education which harms anthropology.

Enough has been said for the moment on social anthropology. If it is accepted that naivety is harmful, there would seem to be no reason why our exposure should be confined to other social sciences. All these disciplines have, since their origins, been influenced by an image of the natural sciences and in view of this it is not unreasonable to endeavour to acquire some familiarity with the history and actual practice in these exact disciplines. In the general issue of the applicability of natural science techniques and methods to social phenomena it would seem to be helpful if we were more informed than at present about the natural sciences. It is, in fact, crucial for all the social sciences to substitute for the present gross misconceptions of the natural sciences a sympathetic and informed view from which we might be able to construct a better type of humane discipline.

Having received no training in either philosophy or science,

I have been able to take to the literature an anthropological sensitivity rather any type of expertise, so the problems which I shall pick out and the manner in which I shall discuss them will stem very much from an anthropological education. And the intention, moreover, is by no means to become a philosopher, but simply to allow the insights gained in the exposure to feedback and improve the practise of anthropology itself.

'We ourselves come into the process.' (Young:1960:103).

Meaning belongs to language; language comes in systems; therefore meaning comes in systems. Language is a human creation so meaning is not external. If we accept this we have the problem of defining what science is about, for if we suggest that science is about the world we must yet concede that in some sense the world is of our own making. What does contribute when we suppose we are talking about an external reality - we enter the process, but where? This problem perhaps naturally suggests itself to an anthropologist, so I shall begin by discussing the literature that brings it to the fore.

Human being live in a symbolic universe, a fabric of meaning. Can we therefore accept A. E. Housman's lines - 'I am a stranger and afraid, in a world I never made.' There is an obvious sense in which we think about the world as an independent reality, yet, at the same time the world for us is the meaning, we give it. So, do we talk about an external world or do we find in Cassirer's words that instead of dealing with the things in themselves 'man is in a sense constantly converging with himself'. (1944:25). All the sciences, says Hume in his Treatise on Human Nature 'have a relation to human nature; however wide any of them may seem to run from it; they return back by one passage or another'. In this section I shall look at this relation. The problem - that our science is about the world but that meaning derives from us - is not solved, but the opposition is weakened somewhat.

German metaphysics represents an extreme form of philosophical speculation. Santayana discusses it in terms of egotism, an attitude which assumes that 'nothing should control the mind except the mind itself. Egotism is subjectivism become proud of itself and proclaiming itself absolute'. (1939:151). The egoist 'grasps only himself and in that sense his egotism turns out true'. (Ibid:71). But the omnipotence of thought is neither a primitive nor a metaphysical peculiarity. Do we ever assume that our meaning and language (that is our thought) do not define the world in which we live. But, do we ever get any nearer to reality than meaning? Do we in science have a dialogue of the mind with nature or only of one mind with another?

Langer in her Philosophy in a New Key (1942) suggests that man lives in an essentially human world. The symbolic universe is constructed by us, the fundamental process of the human mind is symbolic transformation. (This has absolutely fundamental importance for the task of theory construction in the social sciences which an ignorant form of scientism has managed to obscure). And we must recognise here, besides the creative aspect of our thought, the essentially social (because linguistic) nature of our ideas. Feuerbach has said that 'two beings are as necessary for the generation of the human mind as they are for the generation of the human body'. The essential point is that we live in a shared conceptual world. We are not in the realm of private meaning but of collective representations, but as we are dealing with meaning, we can sensibly oppose to subjectivity not objectivity but only inter-subjectivity. Meaning here is not individual but its supra-individual social character consists in its shared quality not in any externality. Now it is clear that in characterising social facts as external Durkheim meant nothing metaphysical, and we must remember that when he suggested there existed an independent realm of social facts he was endeavouring

to create a discipline. Nevertheless to substitute inter-subjectivity for externality does rather require that we redefine the distinction between individual and social facts, for clearly psychology and sociology cannot here be seen as referring to two completely independent types of phenomena. Thus despite the marked failure up till now of integrating psychological insights into the social sciences, this stance does compel us to continue to search for ways in which the two disciplines can be meaningfully integrated.

To return to the relation between science, the world and ourselves, two important areas in which it can be said that we make a significant contribution are these. Firstly, in sensory experience, we always knew, but modern experimental psychology supports common sense, that sensations simply are not accurate or complete reports about an external world. The physical constitution of our organs and the brain work together to select and organise from a chaotic flow of impressions. Our merest sense experience is a process of formulation. An object is, then, not a datum but a form constructed by an intelligent organism. As N.R. Hanson says in Patterns of Discovery (1958) 'seeing is a photo-chemical event but perceiving is interpretative and creative. So ideas do not derive from sensations rather experience gets its sense from conception. Sensation, then, is theory-laden, influenced, for example, by expectation, so there must be an intimate connection between 'perceiving as' and 'perceiving that'.

Secondly, there is a close relationship between science and language. I shall not here concern myself with whether there is a metaphysics concealed in the structure of a language, but as science is essentially communicated knowledge, it is in language. It uses symbols and we cannot assume that for literature language is central but that for science it is merely a neutral means of expressions (see Barthes in Lane ed: 1970). No code is privileged and no language is innocent. For instance, we cannot assume we have eliminated ourselves from science simply because it uses impersonal grammatical constructions.

I can best start my discussion of the philosophy of science by dealing with the problem of externality. It is often said that Bacon offered an inductive theory of scientific method: science accumulates facts and from them generates general principles. Now inductivism is a hopelessly erroneous description of, or prescription for, scientific activity, but we would be wrong to attribute this type of view to Bacon. He was far too much a product of a medieval education for this to be even possible. His desire was to break the hold of the Aristotelian system and to erect a new system of reliable knowledge. In this task he did not deny a creative role to the human intellect, but ideas were not simply to be conceived in 'the little cell of human wit', but tested 'with reverence in the greater world'. They were to be used to find out experimentally the most basic processes of nature by discovering which ideas were of the most wide applicability (see Harre: 1964, Purvori: 1967). The new science was to be subject to a continuous and external control.

This is not inductivism, but we have still to explain the idea of external control. Science as a 'second Scripture' is possibly the solution: for Bacon, God reveals himself in the world. As Heisenberg states: 'This new activity was in its beginnings certainly not meant as a deviation from the traditional Christian religion. On the contrary one spoke of two kinds of revelation of God. The one was written in the Bible and the other was to be found in the book of nature' (1958: 16). Thus meaning is derived not imposed and is external in the sense that it belongs to God. But this view and with it the notion of a purely external control becomes unacceptable the moment we focus our atheistic attention on our contribution, the models we build up - the morphology of significances of which we are the creators. If nature really is a book to be read, in which

language is it written? We cannot escape Whewell's dictum: 'There is a mask of theory over the whole face of nature', and of this theory we are the authors - this is where we enter the process.

This view is of some significance, for a whole set of terms that are still used in the philosophy of science, for instance empirical, fact, etc. are semantically kin to this idea of externality. If we are unable to find a useful meaning for this concept then these others belonging to the same epistemological standpoint can only be a source of confusion. All activities in science are theory-dependent, so how could we use the term empirical to which the term theoretical is opposed? In the O.E.D. we find that the concept of datum and fact are related to the notion of givenness, which on psychological grounds, we know to be untenable. Now the philosophy of science uses for the most part the language of ordinary discourse, and natural languages are simply not in order. They are the anonymous creations of unconscious generations of amateurs and can be improved upon. Their capacity to carry meaning is, of course, rooted in their stability, but if we equate meaning with use and then conclude they are in order we put ourselves at the mercy of the theoretical prejudices of our predecessors in the use of language (see Gollner:1959). When we are aware that words simply do not express what we mean they can only be substitutes for thought. It is no advance if we feel uneasy speaking of reality to use the concept 'reality' instead. Philosophy is concerned with evaluating the use of concepts, that is, not simply with the use of words but rather with what it makes sense to say. Fully conscious of our contribution in science, thinking in terms of models deriving from ourselves, the terms in which we talk about the activity of science are most unsatisfactory. (At the same time as making this remark about philosophy, it ought to be added that if anthropology is basically about a fabric of meaning and language, then it will be the natural language of the culture in question that in part supplies the structure of the phenomenon which is being investigated. Here, therefore, the natural language must be treated with great respect, and those logical deficiencies and ambiguities which one would wish to remove from a philosophical language which has a precise task to achieve may be precisely the most important aspects of the language user's situation).

Moving from Bacon to classical and modern physics, one must discuss the Cartesian distinction between *res cogitans* (self) and *res extensa* (world), which was so significant in the evolution of the natural sciences. Its implication was that one could talk about the world without reference to oneself; a position which came to seem a necessary condition for all natural sciences. In the 17th century science looked away from man towards machines for explanatory purposes (with several dire effects on the social sciences, which were founded upon a slavish and unscientific imitation of them) but by 'a curious revenge (this) is now found to be also its chief theoretical deficiency'. (Young:1960:107). It has been found in modern theoretical physics that we cannot eliminate ourselves; in certain circumstances knowledge is essentially a relationship and the scientist has theoretically to reenter himself into his sciences. In Young's words: '—our physical science is simply not a set of reports about an external world. It is also a report about ourselves and our relations to that world—'. (1960:103). Heisenberg in a similar way: 'what we observe is not nature in itself but nature exposed to our method of questioning'. (1958:57). But perhaps Jeans in his address to the British Association in 1934 sums up this general trend in thought most efficiently: 'The nature we study does not consist so much of some thing we perceive as of our perceptions. It is not the object of the subject-object relation but the relation itself. There is, in fact, no clear cut division between the subject

and object, they form an indivisible whole—.'

Now if this weakening of the Cartesian position is to be welcomed, that is, we become more conscious of our part in science, Jeans' conclusion is wrong. If in some sense, science is about reality for us, it does not follow that it speaks about our perceptions rather than about the world. This suggestion and the type of science to which it leads, are unacceptable. How can I maintain this when all along my emphasis has been on our contribution? I have endeavoured to humanize science and now suggest that science is about the real world. No ultimate solution to this problem that science is about the world but that meaning is human is offered save to suggest that science does refer to the world but that it never stands alone; it is always part of a larger system of thought. Science has not suddenly become philosophical in the 20th, it has never been independent of philosophy. And here the underlabourer conception is clearly wrong. The suggestion that it clears up some preliminary confusions and then positive science can get along on its own, is simply untrue (see Winch: 1958). Philosophy is a permanent part of the structure of science; its foundations are metaphysical and its method is always intimately related to an epistemological position. To deny science freedom in this way allows us to include ourselves in our thought and to suggest that science is about the world. This is the more so when that ethos of the scientific community — rational criticism — provides, as Popper has stressed, a tough environment in which our thoughts about reality have to compete to survive. This factor for Popper (see Conjectures and Refutations: 1963) resolves the problem of how knowledge may be a human affair but yet not arbitrary. Whilst this view cannot simply be left as it is, it contains a great deal of truth.

System and Meaning in Science

Pouillon in *Les Temps Modernes* (Vol. XII: 1956), rightly points out that the originality of Lévi-Strauss does not lie in his emphasis on structure; it consists in taking this characteristic seriously and 'd'en tirer imperturbablement toutes les conséquences'. Here I shall make the idea of system central and try to draw all consequences from it. But an anthropological note is in order first. The achievement of Malinowski was to emphasize, against an earlier tradition, the systematic nature of culture. Now the atomism of the Victorian approach coexisted with an interest in belief, and for the gain of system in functional theory we suffered the loss of interest in meaning. This interest returned in Evans-Pritchard's superb (1937) monograph on Zande thought where the ideas of system and sense are central. (But so unannounced was this shift in attention that it seems many became aware that it had happened rather belatedly). And perhaps it is one of the more important aspects of structuralism to look firmly together these ideas of meaning and system (see Douglas: 1966 on Judaic classification). Nor should it appear strange to combine Evans-Pritchard and structuralism at this point, for while he is in no sense a structuralist, it must be recognised that his interest in the *Année* school brings him into that tradition of French sociology of which Lévi-Strauss is also a product.

I shall deal with system and meaning in science primarily with respect to one historical example. Let me start with two quotes from Harré's excellent Matter and Method (I). He sees Newtonian dynamics as the final adoption of the Corpuscularian philosophy—the mechanical world-picture, a general conceptual system 'the acceptance of which determines the direction in which the analysis of phenomena should proceed and the content which must be included to make an explanation acceptable' (1964: 105). Elsewhere that: 'Acceptance of the doctrine that matter is that which is defined by the primary properties not only determine the

details of a g.c.s. and hence the acceptable form of explanation, but also the details of acceptable scientific method'. (Ibid:114).

It was possible for a Victorian positivist such as Pearson in his 'Grammar of Science' (1892) to see science as ideally free of philosophical impediments. But the Newtonian system, one of the greatest achievements of the natural sciences both rested upon and was intelligible only in terms of essentially philosophical assumptions. And this must be so of all scientific systems. If we now accept as natural the idea of a corpuscularian world, its essentially modern and philosophical character must be stressed, for it requires we admit the void into our universe. And we may recall, for instance, that Parmenides among others was unable to accept the reality of nothingness on logical grounds and then to deny the possibility of motion. Newtonian theory rests ultimately on the discontinuity of matter - we must first accept the possibility of empty space before we can conceive of motion as rearrangement in space. Historically it was the philosophy in Gassendi's Syntagma which by separating the notions of space and matter made this idea acceptable.

But no less important than this foundation was the intimate dependence of Newtonian science on the type of philosophy which finds expression in the writings of Locke. The Newtonian model results from a selection from sensory experience: it gives a differential existential status to its various components. The key distinction here is between primary qualities (such as mass) which are judged to correspond to real properties in the world, and secondary qualities (such as colour) which belong to our perceptions but do not exist in the world. Newtonian mechanics is possible only with such a distinction - a different epistemological stance, for instance Berkeley's *esse est percipi* would have produced an entirely different kind of science. It is no exaggeration for instance to see the Copenhagen interpretation of quantum mechanics as a direct philosophical heir to this Berkeley view. In some sense, then, science talks about the world, but its relationship to metaphysics and epistemology define for it the type of world about which it is to speak, and constrains both what it is permitted to say and what method it can employ. (It need hardly be emphasised here that the social sciences must be in the same position. Thus a metaphysical assumption regarding the nature of man must be the basis of theory construction in these disciplines. The problem has been that in real ignorance of the natural sciences, an outdated and misunderstood paradigm has been used in the social disciplines derived from the exact sciences without real attention to the problem of what constitutes an adequate explanation. It is perhaps worth entertaining the idea that the social sciences may not yet even have stumbled on the right type of language in terms of which to explain their subject matter)...

Diagram I. represents the outline of a general conceptual scheme. By regulative principles I mean epistemological assumptions and what are accepted as the correct rules of thought. These are not parts of a conceptual scheme, but obviously underlie all the propositions it contains. By metaphysics I refer to those basic concepts which tell us what there is in the world. This level is ontological, and because it is basic to a system of thought at any time it also constitutes the limits of explanations of that system. A system is based upon those concepts and since they refer to the fundamental processes in the world they are not themselves to be explained by the science that is constructed in their terms. The foundation of any system can never be justified by the system itself, only, if at all, by another system. Taken together those regulative principles and ontological propositions form what Polanyi (1957) might mean by the fiduciary basis of belief. With the same metaphor James in his lectures on

pragmatism suggested that all thought rests on a credit system.

Moving in my diagram from the general to the particular, laws refer to regularities in the world, or in semantic terms the relationships of the terms (and their derivatives) in the theoretical framework. Lastly, I come to events where the notion of system is still absolutely central. To accept that theory determines 'the kinds of things, properties and processes we are prepared to admit' (Harré: 1964:50) requires we accept that events are largely theoretical and involved in a whole set of concepts which supplies them with meaning. As Nietzsche said: 'There are no facts in themselves - for a fact to exist we must first introduce meaning.' This view renders it difficult to use the term empiricism without confusion and at the same time demonstrates why inductivism is not possible. Induction is a passage from the particular to the general. Were meaning external we could perhaps start from observations and end up with generalisations, but the meaning and existence of particular events are created by a whole theoretical structure; we can understand particular occurrences only in terms of some model of the world as a whole, so significance reaches the events level from the ontological level. Propositions here underwrite our interpretation of particular events. The facts are not basic, semantically they derive from a theoretical structure in terms of which the world is conceived. It is this framework as a whole which is basic. As meaning proceeds from the general to the particular, science cannot go in the opposite direction, which is what inductivism would require.

Diagram 1.

G. C. S.

events in the world	(expt. data)
regularities in the world	(laws)
what the world is (limits of explanation)	(metaphysics)
regulative principles	(epist; logic)

To use a cartographic analogy, we construct reality in terms of a set of rules of what constitutes a permissible map, and having decided upon the language for a model as a whole, we have determined in advance the type of event which can occur by making available only a limited kind of semantic label. Thus it must be that evidence is of essence theoretical. Yet we find F.A.Hanson, discussing African thought, making the following comment: '...general propositions seem seldom to be evaluated in the light of contrary empirical evidence'. (1970:61). There is no such thing as empirical evidence; his problem, which is a genuine one, is better expressed in these terms- why do primitives operate with only one model? Hanson's empirical evidence is actually an alternative interpretation that would itself belong to another (in this case our own) system of thought. There are ontological implications involved in the choice of a certain language for building a map of reality. For a primitive to accept the applicability of the language of social relations as a map for the whole of reality (which is what anthropomorphism is) determines for him his experience of that world and the type of concept he may use to explain any particular occurrence within it. It is the symbolic framework, especially when only one is available, that decides the meaning of evidence. It may be objected here that this map analogy leads to an extreme form of relativism. No discipline may rest content upon such a foundation, and it is therefore right

that anthropological interest should again be directed to a search for universals. Clearly our task is to produce maps, which embody other maps, that is to arrive at some system of terms which may serve as a mode of discourse for bringing into meaningful relations more idiosyncratic maps. I do not regard the relativism implicit in the map idea as leading in the other direction, but rather as a brake in this search. Lest we too readily seize upon features that immediately and intuitively suggest themselves as constants, this map notion at least ought enable us to suspend judgment until we are better equipped to vouch for the authenticity of the universals we believe we have found.

If experience is interpreted in terms of a system, what is it that determines the choice of the root metaphors used in the construction of a model? That is, what factors are responsible for the decision that a certain language is the right one in terms of which to map reality? A suggestion from Stark's 'Sociology of Knowledge' may be helpful: the 'basic picture of the world is constituted under the guidance of the axiological system under which society lives and acts-' (1958:278). Would it be possible, then, to relate the anthropomorphic models typical of primitive societies to a point Lévi-Strauss makes in the *Entretiens* (Charbonnier:1961). There he distinguishes society and culture; the former is the relationships between men, the latter the relationship between men and the natural world. Now civilized society, he says, values mastery of the environment, and technological progress involves dislocations in the social order. For the primitive, on the other hand, social harmony is a prime value. Perhaps there is more than a causal relationship between that technical progress in the West and the stripping away of anthropomorphism by which Turgot characterised the rise of the natural sciences. Could we see in the anthropomorphism of the primitive an expression of the value he places on social as opposed to cultural goals; it may be that the choice of root metaphors expresses social values. Thus, the primitive sees the language of social relations as a good map for what we would call the natural world, and by contrast in the technical West the social sciences have endeavoured to explain man and society in terms of analogies deriving from the natural sciences. We are reminded by Horton (1967) that society, because orderly, is a good model, but anthropomorphism is perhaps deeper than this. And of course, science which studies nature is a product of culture, so in searching for those social conditions which made possible the rise of natural science we may have some clue as to the reason for the existence of other types of explanatory model under other social circumstances.

An interesting problem in this area is the stability of those primitive models as compared with the restructuring that is a feature of the natural sciences. Is there something in the nature of anthropomorphic models which lies at the root of this stability; are such promises so able to absorb and define evidence that fundamental rethinking is never required? Are primitive models simply less rigorous logically, or is the difference to be located in the content of the concepts themselves? Our own social sciences seem to have enjoyed a rather prolonged youth, so is the problem the complexity of social phenomena so that here also we cannot expect the same type of theoretical progress that has occurred in the natural sciences? Or might it be that a vulgar form of scientism has prevented the social disciplines from being anthropomorphic enough so that they have been forced to construct theory with the wrong set of terms rather than with those types of concept (rule-following, for instance) by which we ordinarily understand human action? Perhaps there are some conceptual niches (like ecological niches) the acquisition of which allows the ascent of a theoretical ladder. It is certain, for instance that a Berkeley view

would not have permitted the theoretical progress which occurred in the natural sciences. We shall have to see whether all anthropomorphic models essentially lack this evolutionary potential or whether the stability of primitive models has another explanation.

Before I leave this area I would like briefly to mention the idea of epistemic communities (see Holznor:1968). Such communities share a set of assumptions about the world and accept a certain system of rules as governing their activities. Now there are different modes of reality construction; different cultures build different maps. But all maps have a coherent cognitive style and are searches for dependable knowledge; but the criteria for reliability will be internal to a map and so will differ between communities. Natural science, for instance accepts epistemological empiricism, by which I mean the equivalence of observers. In such a community there will be a competitive critical ethos, and, as such sciences will likely be antagonistic towards tradition. For a mystical religious community, on the other hand, we may expect as central the non-equivalence of observers, that is, certain individuals are presumed to possess special insights into the nature of reality. The ethos will likely be hierarchic, the community based upon authority (inegalitarian) rather than competition. But both communities will have a consistent cognitive aspect and in understanding the modes of discourse in these two communities and their respective sociologies, we must remember the different epistemologies upon which they are based.

I can most easily approach this general area of the sociology of science by way of Popper's theory of knowledge as expounded in 'Conjectures and Refutations' (1963). Basically his view of science is, that it is in the words of Xenophanes, a 'woven web of guesses', and as a description of certain episodes in the history of science the idea of conjecture is not without value. If Popper emphasised this aspect, it will be consistent with my emphasis on system to follow up the textile metaphor and draw some implications from it.

For Popper, the truth is not manifest; we cannot know whether a theory is true as we can never completely verify it. All we can do is to make guesses so that all scientific propositions will have a permanently probationary status. But we move towards objective truth by falsification - we always know when a theory is false because we can empirically test the deduced consequences of our hypotheses. Thus we learn by our mistakes and science is a process of conjectures and refutations, or, in Medawar's terms: 'science begins as a story about a Possible World - a story which we invent and criticise and modify as we go along'. (1969). (I am not sure how Popper can be so confident of this movement towards objective truth. If motion is relative and the point to which it is relative (i.e. the Truth) is necessarily unrecognizable in his own theory, how are we to judge or measure motion at all, let alone specify its direction). However we can accept that science comprises two types of episodes which an adequate methodology must distinguish: one of discovery which is artistic and creative, and one of justification and criticism which is very different. Induction is wrong, among other reasons, because it supposes we start with masses of independent facts whereas facts are never independent (if theory comes in systems then the world comes in systems too) but also because it fails to mention this human creative element. What I wish to criticise in Popper is that there is a sociological aspect in this context of justification also. Medawar (1961) describes Popper's view here as the asymmetry of proof and refutation. But in the second context science is far more than a decisive logical or empirical falsification; certainly far more is involved than rational criticism. We enter the process at this point also, and we do so precisely because of the systematic woven nature of scientific theory.

In primitive thought anomalies are marked off as dangerous; in science because they are regarded as theoretical they are challenging problems. And, in science, advance comprises the solution to problems, rendering explicable what was formerly anomalous by revising the theoretical framework. In primitive thought models are stable and predominantly events are absorbed into them. Now the history of science has seen, at times, dramatic theoretical movement. Normal science, however, is within a paradigm (see Kuhn: 1962) and experimentation and observation take place within a framework the basis of which is assumed to be true. All the propositions in this sense cannot be regarded as having probationary status, for at a certain time science works and must work, assuming a certain type of world to exist. Toulmin in his excellent Philosophy of Science (1953) has stressed this feature that we are not forever testing a whole system but rather accepting some of it and concentrating upon particular propositions which are meaningful only when the rest of the system is accepted. Now the problem is this: if science comes in systems and we have a phenomenon which is recalcitrant to explanation in its terms, where precisely is the failure of correspondence to be located? Where in the whole framework does the fault lie? At which level, therefore, must theoretical revision take place? We may therefore accept Toulmin's point, but in one sense each problem places the whole system in doubt. Now experimental evidence may be discounted, or minor adjustment may be adequate. But it may be decided that it is the basic framework itself (i.e. the conception of reality) that is wrong.

Now in all these decisions logic does not act alone. There are conflicting evaluations and interpretations and social factors may be of primary importance. It is easy to be naive in this matter of the sociology of science, but science is a social activity and we must be aware of its socio-historical context. After all it is scientists rather than theories that come into conflict. Generalisation about the role of social factors here would be foolish, we must go in each particular case to the relevant historical context, and in this sense scientific method can only be seen as the whole history of science. But social factors were undoubtedly responsible for the rise of the natural sciences and we must expect them to play a part in the rise and fall of particular theories also.

I shall now return to social anthropology by discussing the philosophy to be found in Pearson's 'Grammar of Science'. Pearson heavily influenced Radcliffe-Brown in certain ways, he belongs to the same age as Frazer, and therefore to read his work is of incomparable value in understanding the underlying philosophical assumptions of that age as well as the scientism of Radcliffe-Brown's.

Pearson does not accept that science is about the world or even that it should be a set of guesses at what there is in reality; assumptions most practising scientists make. For Pearson, science is about sensory experience. The term knowledge has meaning only in the realm of sensation and no sense, when applied to a realm beyond. Science he saw as gradually freeing itself of philosophy. Such a science is descriptive not explanatory in any real sense; it relates 'solely to the special products of (man's) perceptive faculty' (1892:19). The general concepts in science are associations of stored immediate sense impressions and a law is no more than an economical résumé of sensory experience, substituting for a more lengthy description. This is central to his and to all forms of positivism, the idea that there is no more content in a theoretical proposition than in a descriptive one. Thus to explain a chemical reaction in terms of atomic rearrangement says no more than an ordinary common sense description of what is observed in a test tube. Now this characterisation of science and this view of theoretical terms is simply false - and it must be so for if

metaphysics is declared nonsense we simply cannot give an adequate account of the nature of scientific conceptual systems which are always intimately bound up with philosophical foundations.

For us in social anthropology his idea, that knowledge derives from experience is of central interest. For him, ideas were associations of sense impressions and this was a part of that psychology which underlay the intellectualism of our anthropological forbears. Associationism we now know to be grossly inadequate, but it explains why for the Victorian anthropologist the primitive inhabited and experienced the same universe as himself but simply reasoned incorrectly about it. Pearson says this: '-the physical instruments of thought in two normal human beings are machines of the same type, varying indeed in efficiency, but not in kind or function. For — two normal human beings the organs of sense are also machines of the same type and thus within limits only capable of carrying the same sense impressions to the brain. Herein lies the similarity of the universe for all-' (1892:57). And of course we can also recognise in the vision of a pure science freeing itself from philosophy exactly Frazer's notion of the progress of the human mind from religion through metaphysics to science. Perhaps for many of these Victorians this vision was intimately connected with personal experience. Like so many, Frazer in his own lifetime emerged a mature adult having abandoned the faith of his childhood. The history of mankind was supposed to progress in the same way. But rather from this religious crisis he plunged in to doubt about all beliefs, these men made confident claims to rationality (dogmatic perhaps because the notion of rationality may not be rational) which explains also perhaps why they could so easily and unreasonably attribute irrationality to others—both in their own culture but especially in others.

Exposure and Social Anthropology.

What has gone before has profound implications for social anthropology on its own account, but I shall end this paper by briefly discussing some specific topics in our discipline. I shall not discuss functionalism as to criticise a theory at least implies some respect, which functionalism does not deserve. Closely connected with fieldwork, it seems to have been little more than a way of transforming notebooks into monographs with a minimum of thought. At a formal level it is easily assimilable, but I shall make only one point. A theory of interdependence can only be tested by evidence of concomitant variation over time. Yet the functional theory was introduced precisely because it was contended that historical data on primitive communities was lacking. Many theories are difficult to verify but few have been introduced on the grounds of the absence of the only type of evidence that could be used for verification.

Instead I shall look at the work of Radcliffe-Brown since in some form his ideas and approach are still acceptable to many. Firstly, his idea of a natural science as expounded at his seminars at Chicago in 1937. Science is essentially a method and according to Pearson it comprises the study of groups of facts which are classified and from which general principles are drawn by systematic comparison. Now there are other opinions expressed in Radcliffe-Brown's work but this taxonomic-inductive view is basic (see: 1957) He would have wholeheartedly agreed with Pearson that: 'the classification of facts and the foundation of absolute judgments upon the basis of the classification — is the scope of modern science'. (1892:7). The more so as Pearson claimed this method as applicable to social as well as to physical phenomena. So the only way to knowledge is the laborious study of sets of phenomena among which sequences and coexistences are to be recognized. Now this view of scientific method is erroneous (deriving indeed from

philosophers rather than from anyone with a working knowledge of actual science) and if we are to establish a natural science of society, such ignorance of Radcliffe-Brown's part is deplorable.

Radcliffe-Brown was receiving his own training at a time when the physical sciences were undergoing profound changes. But he seems not to have been at all affected, and consequently was able to mislead a great number of those he trained. If we must look to the natural sciences, why to a Newtonian system when even a casual acquaintance with quantum mechanics, for instance, would suggest this as a much more useful source of ideas. His models, in fact, never seem to have been greatly modified. Let us take only the organic analogy which is explicit in his thought. I am not attacking the use of analogy; this type of comparison is basic in our thinking. Talking about the unknown in terms of the known at least provides a language, and of course, analogue models are passed between the exact sciences themselves. Now the organic model came to us from biology, but it came earlier to physiology itself as a model from classical physics and its associated technology. But these machines of the early industrial revolution have long been superseded by ones to be understood in terms of information and organization. Are we still to think of societies in terms of structure and function when the original source of our model now provides ideas which would appear to be more appropriate? 'Biology, like physics has ceased to be materialistic. Its basic unit is a non-material entity, namely organization'. (Young: 1960: 136). If we want to look for biological or mechanical analogies why with those which a little familiarity with the sciences themselves would tell us are outdated?

On another point, facts for Radcliffe-Brown are the starting points, and social structure, a network of actually existing social relations (Radcliffe-Brown: 1940) is equally real. This is not an inconsequential standpoint; for instance, it makes for British social anthropologists raised in this positivist tradition an understanding of the alliance theory of marriage that much more difficult. Alliance theory concerns the exchange of women between the categories of an ideal model of the social order, and actual practice may be considerably different. But it is no criticism of the theory to point to, for instance, the statistical infrequency of that type of marriage in terms of which the social structure may be conceived. This distinction between normative exchange and actual behaviour must be difficult to grasp and its significance difficult to realize if it is suggested that social structure is 'real'. To have defined social structure as a network of behaviour rather than a system of rules influences the way ethnography is analysed, and though his work on kinship is generally praised, Radcliffe-Brown's attitude to structure which is vulgarly positivistic leads him, I feel, to a fundamental misconception of the nature of kinship.

Next I shall briefly consider social change. All theoretical frameworks generate certain problems and we must be aware of those issues with which a certain type of model cannot deal. At the same time it must be remembered that those problems a model does generate receive their definition from the theoretical framework and that they might be better approached in different terms. Now I do not deny that there is a phenomenon to which the label social change attaches itself, but it exists as a separate area of concern in our discipline simply as a problematical precipitate of the view of society as a functional-equilibrium system, and is no more real than that. Another view, for instance, that society is a historical process, makes it difficult to define what change is that processes over time in general are not; this tends to eliminate social change as a particular problem area. This is to say that functionalist social anthropologists have not been dealing with a phenomenon which exists in its own right but one which arises awkwardly from their own

theoretical assumptions. Change can be better dealt with in other ways, or perhaps better eliminated altogether.

On fieldwork I have only this to say. Jarvie (1964) argues that fieldwork is part of a Baconian inductive tradition, which is an erroneous view of scientific method. But from advocating a conjectural view of science he proceeds to bring into question the necessity of fieldwork, suggesting, in Gellner's terms, that it is merely a 'ritual'. This is irresponsible and as elsewhere in this book he is content to allow cliché to be substituted for thought. Jarvie is quite right to criticise traditional fieldwork but it was never inductive in the sense of being theory-free; rather the theory was of a poor kind. If fieldwork is theoretical it needs to be consciously theoretical, problems have to be specified, (here also Jarvie is correct). Anthropology is nothing without its field tradition and we do not need its value to be called into question; rather we need a new and more intelligent and sensitive type of fieldwork.

I conclude with the type of problem with which I began; what is anthropology about? Without suggesting any definition I shall simply indicate one area in which the anthropologist can profitably engage himself. We have seen the beginnings of a trend for anthropologists to do research in complex societies, and now that the political context of our discipline has changed the term primitive would seem to be of no value. We may therefore reject the savage/civilised opposition and see all forms of social life as being legitimate objects of study. The time is right to introduce ourselves into our subject. In this sense we may reverse a comment that Lévi-Strauss made in his inaugural lecture at the Collège de France in 1960 (publ. 1967). He suggests that only a study of primitive societies can assign to human facts their true dimensions. The position for an anthropologist now is surely this; the full dimensions of human facts are realisable only when he includes in anthropology his own culture. We are conscious of the consequences of this omission in the past. Evans-Pritchard in his wonderful 1934 essay on Lévy-Bruhl (reprinted 1970) quite rightly complains that though working with such notions as primitive/civilized or pre-logical/logical in his generalizations about thought, he nowhere stops to consider the common sense of his own society. But now our attention has returned to meaning this inclusion would seem to be essential. In talking about the human mind we have an advantage over the philosopher, our much wider comparative basis. The professional philosopher will for the most be familiar only with the thought of a limited group of linguistically and historically related cultures. But our advantage is sacrificed if, despite our familiarity with the thought of so many primitive peoples, we systematically exclude the thought of our own scientific cultures from our competence. Science through technology is intimately connected with the rest of the social system but that apart, scientific thought has been one feature by which many have attempted to distance ourselves from the savage. Can we really make such pronouncements without embarrassment if we do nothing to find out what science actually is, if we remain unacquainted with its contemporary practice and philosophy?

It may be argued that scientific thought is too close to us, and that if anthropology deals with anything it deals with remoteness. Now there are both geographical and historical distances. The Victorian, in a sense, did not make any distinction for to travel to an exotic culture was to travel through time also to meet one's contemporary ancestors. Rightly we no longer make this equation. But the two types of remoteness separately constitute valid areas for anthropological enquiry. We have contemporary cultures both industrial and pre-industrial, but no less we have that distance in our own culture that the time dimension provides. This is to say

that the alchemists are just as much in our field as are the Nuer. Through this other dimension we have forms of society historically related to our own, but we can also deal with that history of scientific thought, which has evolved into our present world-view. This new direction focuses our attention on conceptual systems to which we can relate ourselves but from which we are also remote. We would still be dealing with alien modes of discourse and the sociology of other forms of cultural life - a legitimate province for the social anthropologist.

Malcolm Crick.

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THE SHIFT TO AN ANTHROPOMORPHIC MODEL OF MAN

Thanks to the work of Kuhn, it is now possible to express radical movements in scientific thought in a general context. Deep changes in the sciences of man have been taking place. There has been what Kuhn calls a paradigm-shift: I will try to bring it into focus in this short paper. The notion of paradigm was introduced by Kuhn in an attempt to make clear the intellectual and social structure of scientific revolutions. By a paradigm he can be interpreted to mean that complex of metaphysics, general theory of action and methodology which forms a coherent background to the science of a particular time, and which is often given concrete expression in some admirable archetype of scientific work, such as Newton's Principia. I believe that the present state of the sciences of man as a social being is explicable as a transition from one paradigm to another, from what I shall call 'The Old Paradigm', to 'The New'. I shall try to articulate some features of the New Paradigm.

I have chosen to centre my exposition in this paper around social psychology. It is particularly in that field that conceptions of method and ideas about the nature of human beings and their modes of action come into the sharpest focus. But whenever a New Paradigm appears in a central area of a scientific field its effect is felt wherever a similar subject matter is studied, and so a New Paradigm in social psychology must have an effect in anthropology, encouraging some existing trends and inhibiting others.

The Old Paradigm involves the conception of scientific theory as a deductive structure from which the empirically ascertained laws are to be derived by strict logical inference. It conceives of the function of theory as confined to the bringing of order into the empirically ascertained laws. This positivistic view of theories has the important consequence that provided the theory performs well logically one may be fairly casual about the verisimilitude of its terms. Indeed in psychology generally positivistic ways have encouraged a kind of 'experimentalism', by which it is hoped that experimentation by itself will create an appropriate system of concepts.

In the Old Paradigm a law has the form $F(x,y)$ where x and y are dependent and independent variables, and it is assumed that all properties of the system in which this 'law' is observed to hold can be treated as parameters, that is maintained constant without materially affecting the relationship between those allowed to vary. This assumption is thought to be justified in its turn by the general principle that the aim of science is to discover correlations between changes in the properties of systems. In the farthest background lies Hume's theory of causality according to which such correlations are causal laws. The Old Paradigm has been very clearly articulated for psychology by C.L.Hull, and is particularly well exemplified in social psychological contexts by the work of 'experimentalists' such as J.W.Brehm.

It is very important to realize that this paradigm was not derived by abstraction from real scientific work, but was an invention of philosophers. In modern times it has its origin in Berkeley's attempt to establish the existence of God and other spirits by denying that matter had causal powers and by insisting that science was really no more than a set of rules for anticipating sense experience. This idea was taken up by Hume and developed by John Stuart Mill, from whom it was adopted as a methodology by the infant social sciences. There is a measure of irony in the strict adherence by social scientists to a methodology which they hoped would give them scientific respectability, when that methodology derives from such an ancestry!

The New Paradigm derives from a double paradigm shift. The First Shift involves passing from a philosopher's conception of how science ought to be, to the use of methods which are actually employed in the advanced sciences. The most important aspect of this paradigm shift for the social sciences is in the understanding of the role of theory. In the New Paradigm theory describes models of the real processes which generate behaviour, and so must be taken with the utmost seriousness. And in the modern physical sciences theory is built around the idea that the explanations of the way things and materials behave is to be explained by certain powers, which they have in virtue of their natures. In chemistry this is the familiar idea of valency, which is the combining power of an atom which it has in virtue of its electron structure. In psycholinguistics this is the Chomskian idea of a competence, which is one of the linguistic powers a person has in virtue of the structure of his brain and nervous system. In the New Paradigm for social sciences the most important human power is that of monitoring the way one controls one's performance. But more of this in a moment.

The Second Shift concerns the nature of the entities that are being studied and their mode of action. In the Old Paradigm people were conceived as complex but essentially mechanistic devices, whose behaviour could be analyzed into simple stimulus-response regularities. In so far as a person is aware of his behaviour this is scarcely more than as a spectator of the flow of responses to controlling variables. But this is a caricature. It is clear that social life, at least, is mediated by the grasping and exchanging of meanings, and is profoundly affected by the flux of emotions, the state of people's knowledge, their beliefs, and so on. Apparently paradoxically the ordinary notion of a person is a much more complex and realistic concept than is the truncated mechanism of the Old Paradigm. Why then should any intelligent person subscribe to the Old Paradigm? The answer is that people thought that any reference to mental states or meanings was subjective, and unscientific. In the New Paradigm a conceptual system is being articulated which by following the actual method of the physical sciences more closely, encourages the introduction of just those very elements of feeling and meaning which were eliminated by adherence to the Old Paradigm idea of science. If one wants to get an idea of what New Paradigm social science looks like there are the works of Erving Goffman to be studied. He seems to have realized all this for himself, and long before there was any general movement in that direction. His work is not the less scientific because it does not resemble mathematical physics. It is the more scientific precisely because it uses a methodology and a conceptual system appropriate to the material of study, that is, the way people carry on their social lives.

Conceiving of human beings as people and their mode of action, as social beings to be self-monitored rule-following, means that very different models of the processes which generate social behaviour must be used from those of the old paradigm. One important feature of such models will be that they must contain some form of 'feed back', by which the various orders of monitoring of performance can be achieved. This is not the simple sort of feedback that is found in thermostats, but more the sort of arrangements that are found in automatic pilots in aircraft. The system contains a model of itself and of its environment, and it matches its performance against the behaviour of that model. In the New Paradigm specifically human functioning is thought to be explicable by supposing that a person contains a model of the lower order model, and that it controls such higher order features as the style of its performance with this complex device. The mathematics of the New Paradigm will then be System Theory, and statistics will be used as in the advanced sciences, not as an exploratory tool, but as part of the theory of error. The general form of such psychomathematics can be found in the introduction of Bayliss's book Living Control Systems. This Second Shift takes us into what I call the Anthropomorphic model of Man.

The form of the mathematics and the nature of the theories so expressed are closely connected. Information theory and statistical forms of the parametric method are the mathematics of the Old Paradigm since it is concerned with correlational relations between 'behaviours' and their conditions, and in the spirit of the positivist conception of science is quite casual about their connection. Information theory concepts describing the channels themselves are logical functions of the concepts describing input and output, so that realistic hypotheses as to the neural mechanisms cannot be generated from within that theory. It follows from the considerations I have been advancing that Systems Theory, the mathematics of the New Paradigm enables us

(a) to express the control of performance by monitoring, and so given the relation between neurophysiology and performance,

(b) to generate realistic hypotheses as to the structure of the entity which is capable of the performances we have identified as essential to social life, and Chomsky has identified as essential to using language, that is as to the physiological basis of competences and powers.

The essential structure of the anthropomorphic model from a scientific point of view, can be viewed most easily in the rather narrow context of individual psychology, but has direct consequences for anthropology.

In each human being there is a complex pattern of sequential physiological states, which for illustrative purposes can be supposed to be decomposable into linear sequences. Let such a sequence be

$$P_1 - P_2 - P_3 - \dots - P_n.$$

Applying the realist scientific method to the understanding of this sequence leads to the postulation of physiological mechanisms $M_1 - M_k$ which produce the sequential pattern. These elements of the pattern which we related through the operation of one or more of these mechanisms can be called 'cause and effect'.

We also know that in each human being there is also a complex pattern of sequential psychic states, such as emotions and thoughts of various kinds. For illustrative purposes let us suppose part of this sequence to be represented by

$$S_1 - S_2 - S_3 - \dots - S_m.$$

What do we know about

- (i) the relation of this sequence to the physiological sequence?
- (ii) the generation of the sequence?

We know from a number of studies, the most important of which are those by Schachter, that the correct way of considering the S-sequence with respect to the P-sequence, is that the S-sequence consists of the meanings given by the person who experiences that sequence to some of the items of the P-sequence. For example P_1 may not be experienced as a meaningful psychic state, but P_2, P_3 and P_4 may be experienced jointly in S_1 , P_6 as S_2 , and P_5 as S_3 .

In fact the sequences may be ordered very differently and correspond very unevenly.

Since the S-sequence is a sequence of meanings the organization imposed on that sequence will have something of the character of a grammar, and will involve relations which could hold between meanings. The most characteristic of such order-giving relations is 'reason for'. Since the P-sequence is a sequence of physico-chemical states organization will be imposed upon it by such concepts as 'oxidation of....'. This explains why the organization of the sequences are, in general, a bad fit.

Applying the realist methodology of reason to the S-pattern demands the introduction of generating 'mechanisms' for that pattern appropriate to its nature. Typically those will be transformations of deep structures, and other suitable mechanisms, or in some cases, where the mechanisms elude detection, models of the unknown generators. It is here that Freudian concepts might have a place in a scientific psychology.

As to the metaphysics behind the two sequences of states, I accept the contingent identity thesis, or 'Australian materialism', that the differences between S-states and P-states are not differences in existence, that is they are not numerically distinct, but are differences in the mode of manifestation of the one existent. S-states and P-states differ pretty much as do statements and the marks or sounds of which they are the meaning. Detailed applications of this idea to psychology have been worked out.

The P-sequence is susceptible of a preliminary application of the parametric method, and the use of independent and dependent variables as analytical tools, but this is justified only because of the nature of the mechanisms which generate the pattern and sequence of P-states. The S-sequence is not susceptible of the application of this method, in general, because generative 'grammars' and their analogues produce patterns in such a way that those patterns are not susceptible to this method of analysis; of Chomsky, particularly Syntactic Structures.

S-sequences are 'teleological' in the weak, Taylor sense, in that they are ordered by such concepts as 'reason for' and 'intention' and 'following a rule', while P-sequences are non-teleological, in that they are organized by the concept 'physical cause of...'. S- and P-sequences are not, in general, mutually convertible, because of the degree of mismatch of their respective organization.

The structure of the S-system determines the structure which is sought in the P-system when we are seeking an explanation of the S-system. Since it is a logical point that the criteria of identity for entities and systems on the P side must derive from the S side, in order to be relevant to the explanation of performance, psychology must necessarily impose its form upon physiological investigations. If the S-sequence is not only grammatically ordered, but is also seen to involve modelling and monitoring feedback, then it will impose a system-theoretical structure upon physiological hypotheses, since the neurological system must contain the necessary mechanisms for the performance of the higher order functions. And in so far as we inherit those mechanisms there will be deep structures in grammar and in the rules of social life. We have seen preliminary steps in the discovery of these structures for language by Chomsky and for certain aspects of the social behaviour of men by Lévi-Strauss. If the society of men is essentially a linguistic phenomenon, then there should be 'social universals', and Lévi-Strauss has opened up one way of seeking for them. But it remains an empirical question whether there is an underlying deep structure to meanings, and this would still be an empirical question even if the Chomskian grammatical thesis for languages was finally established.

Ron Harré.

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RUBBISH AND RACISM:

THE PROBLEM OF BOUNDARIES IN AN ECOSYSTEM.

"We had fed the heart on
fantasies;
The heart's grown brutal
from the fare."

W.B. Yeats, Meditations in Time
of Civil War.

In an age of mounting racial tensions and in the presence of an impending environmental crisis, it no doubt appears irresponsible to some for the anthropologist to fly off to a remote corner of the world and continue his study of people who, even if they do survive, will have no effect upon the world's major problems. As research money becomes scarce it seems that both universities and foundations agree that such field work is a luxury which they can ill afford. Anthropologists, of course, have always maintained that their research has been intimately bound up with the total human condition, and if their peoples have been remote and their theories esoteric this has been so only in order to offer a fresh approach to the problems which we all face daily. If anthropologists have been right, then they should have something to offer a bewildered western world concerning the two major crises which confront it: the growth of racism and the threat of environmental pollution.

To date, anthropologists have offered little guidance for these problems. Perhaps they have been reticent to address the issues because they feel that their traditional methodology has not equipped them to discuss "complex" societies. Surely, however, this is beside the point, for it is precisely through the insights which anthropologists have derived from the study of isolated societies that they can confidently offer a new approach to the problems at hand. At the risk of being both pre-mature and "trendy" it is perhaps nonetheless useful to try at this point to sketch an anthropological approach, drawing upon specific field studies of "primitive" societies. In the light of this material, rubbish and racism can be seen as problems resulting from the Western world's resolution of an issue which all societies confront - the problem of establishing boundaries in an ecosystem.

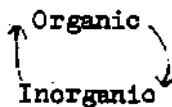
Anthropologists have learned from the science of ecology that it is not sufficient to understand societies as totally self-contained units. Rather they must be understood as elements in a larger functioning system, an ecosystem. As ecologists have defined it, the study of the ecosystem involves the examination of the relationships between living communities (plant, animal or human) and their non-living environment. Ecosystems exist on different scales. A back yard garden or a tropical fish tank can be examined as ecosystems. Indeed anything which involves an interchange between biotic and inorganic matter, from a drop of pond water to the entire biosphere can be understood as an ecosystem.

The important point to remember in an ecological study is that its focus is upon the relations between elements in a system rather than upon the elements themselves. Thus, an ecologist is not concerned primarily with the physiology of a caterpillar, but rather with the fact that the caterpillar ingests certain types of leaves, thereby temporarily altering the balance of the environment which surrounds it. The caterpillar as well as the leaf upon which it feeds are seen as elements which occasion specific types of interchanges between non-living elements and the biotic world. In this sense the leaf and caterpillar are not seen as autonomous units, but

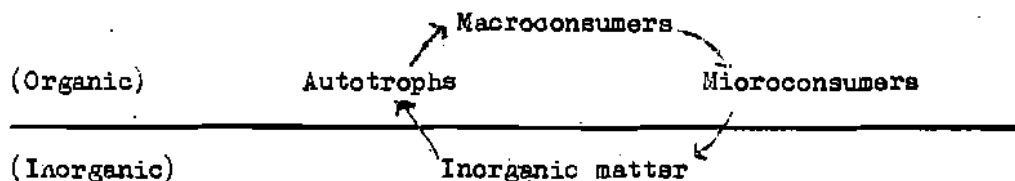
rather as specific processes or more appropriately, states in the overall process of interchange between inorganic and organic matter. In this the leaf or the caterpillar is said to occupy a "niche" in a larger ecosystem.

On a larger scale entire biotic communities can be studied as elements of larger ecosystems. Then the question becomes not what a particular caterpillar does to a particular leaf, but what a community of caterpillars will do to a tree or indeed a forest, and finally, what deforestation will do to the soil. Human societies, like any other biotic community, can be studied in a similar fashion, and as ecologists have pointed out, no matter how impressive their other achievements, human societies can do no more than occupy a particular "niche" in an ecosystem.

The central fact about the ecosystem is that it is cyclical: in a schematic form the cycle can be understood as simple circular exchange between inorganic and organic material, something like this:



In reality, of course, the process is not this simple because inorganic matter does not spring spontaneously into living material. A more useful model is one which represents the cycle in terms of the intermediary conversions which occur. In simplified form the cycle can be broken down into four analytical components: 1) inorganic matter; 2) "autotrophs" or primary producers (i.e. plants; plants in the presence of sunlight convert inorganic elements and compounds into biotic material); "macroconsumers" (chiefly animals who feed upon plants and each other); and 4) "microconsumers" or saprobes (microbes which convert the organic compounds in dead animals and plants back into inorganic elements and compounds.) Schematically the cycle can be drawn as follows:



The system as a whole is the object of study for the ecologist, and within this context no element in the system has any intrinsic autonomy. Each element is merely a stage in an overall process which has no identifiable end or beginning but repeats itself in a continuous cycle. In an ecosystem, then, there are no intrinsic boundaries. It is not clear from the study of the processes themselves just where one process in the system merges into another. Nor is it apparent which series of processes should be grouped together and bounded off from other processes which proceed or follow them. Any boundaries which are ascribed to the system are artificially imposed by the observer in order to make sense of the realities before him. Since these artificial boundaries are conceptual fantasies or fictions, their placement within an ecosystem is arbitrary. As a noted ecologist has put it, "Since the ecosystem is primarily a unit of function, just where one draws a line between one part of the gradient and another is not particularly important." (Odum:1967:10).

Anthropologists have drawn attention to similar types of arbitrary boundary-making and classification in other realms of human experience. Field work has revealed, for example, that the light spectrum has no intrinsic divisions or colour categories - at least none that are capable of being observed by the human eye.

The number of colours which a given society sees will depend upon how they "cut up" the spectrum, and although Americans may see six colours, people of the Bassa culture in Liberia experience only two, while peoples of the Shona language group in Rhodesia see four. The discovery of the phoneme in linguistics provides evidence of a similar process in the human experience of language. The phonemic system of a given language is imposed as a category grid upon the acoustic experience of that specific culture, and a continuum of sound is divided into significant units which are arranged in intelligible patterns to provide meaning. The phonemic system of two different languages may differ, however, and while "r" and "l" represent two different sounds in English, they are experienced as one significant unit of sound in Japanese.

It is not necessary to go exclusively to cross-cultural situations to appreciate that boundaries are only operative fictions. Anyone who has examined the graphic works of the Dutch artist, M. C. Escher realizes that boundaries are conceptual fantasies. In several pictures entitled "Metamorphose" Escher transforms birds into fish and then into reptiles without the observer being able to ascribe satisfactory boundaries to any of these elements as autonomous entities. If the graphic work is considered as a whole the observer is led to make such mental equations as "birds are fish are reptiles", or more accurately, "fish are really birds on the way to becoming reptiles". Some of the "unfinished" stone sculpture of Rodin presents the same conceptual problems. One can say that the sculpted head stands out from the marble which is surrounding it, but only if one created the conceptual fiction that the two are in some prior sense separate. When considered as a whole, however, it is equally true to say that a hunk of marble exists, part of which looks like a head.

The same point has been elaborated with even more puzzling examples. E. Ashby in a book entitled, Design for a Brain, illustrates the problem of interrelated elements in a system:

"As the organism and its environment are to be treated as a single system, the dividing line between "organism" and "environment" becomes partly conceptual, and to that extent arbitrary. Anatomically and physically, of course, there is usually a unique and obvious distinction between the two parts of a system; but if we view the system functionally, ignoring purely anatomical facts as irrelevant, the division of the system into "organism" and "environment" becomes vague. Thus, if a mechanic with an artificial arm is trying to repair an engine, then the arm may be regarded either as part of the organism that is struggling with the engine, or as part of the machinery with which man is struggling... The chisel in a sculptor's hand can be regarded either as part of the complex bio-physical mechanism that is shaping the marble, or it can be regarded as part of the material which the nervous system is attempting to control". (Ashby: 1960: 40).

If this illustration seems a little far fetched, perhaps a more mundane example will be more useful. Everyone accepts without much amazement the fact that by eating food we are enabled to live, yet most of us stop for a moment's reflection when this same fact is affirmed in the title of a recent American film, "You Are What You Eat". When we stop and think, the film title tells us only what we understand as common sense and elementary biology, but something lingers on as odd about the statement.

The problem, of course, is that we know this statement to be true, but we do not believe it, or more precisely we do not believe in it. We know that what we ate yesterday is a part of us now and will be separate from us at some point in the future, but none of us acts as if this were true. If we did, the sentence "I was a day"

would make perfect sense to us, but clearly it does not. We affirm that this sentence is nonsense despite the fact that we all realize after a moment's reflection that in fact the stuff we are made of at this point in time was undoubtedly at an earlier stage some form of vegetation - perhaps quite literally a daisy. In spite of all we know, all of us need to believe in the fiction that invariable boundaries actually do exist which separate what we eat from what we are from what our remains become.

At the core of this problem is a paradox. While boundaries have no intrinsic meaning for the scientist whose focus is the whole cyclical ecosystem, a society, which occupies a particular "niche" within the total system, has no meaning without them. Just where one draws a line between one part of the gradient and another may not be particularly important for the ecologist qua scientist, but it is of vital importance to men in society.

Much of modern anthropology can be understood as an elaboration of this theme - societies are bounded systems. Following the lead of Lévi-Strauss, structuralists have revealed that belief systems and myths are pre-eminently concerned with boundaries - delineating them, clarifying them, reinforcing them when weak, and above all professing belief in them. In addition to Lévi-Strauss's works on primitive thought his three volumes of Mythologiques are a demonstration of the way in which mythical stories are in fact logical statements, preoccupied with the problem of boundaries. Mary Douglas's book, Purity and Danger, is an amplification of the same approach applied to the concepts of pollution and taboo. As she phrases it, "...rituals of purity and impurity create unity in experience". They do this by establishing boundaries, and ascribing objects and actions to proper categories. The ideas of pollution, rubbish and dirt present themselves as "matter out of place". "As we know it, dirt is essentially disorder. There is not such thing as absolute dirt; it exists in the eye of the beholder.... Dirt offends against order. Eliminating it is not a negative movement, but a positive effort to organize the environment." (Douglas:1966:12,48). The work of Victor Turner draws upon the ideas of Lévi-Strauss and the analytical concepts of A. Van Gennep and concerns itself with the way in which all collective rituals are public declarations of the society's acceptable boundaries. The implications of these theoretical works receive elaboration in several recent field monographs, including Peter Rivière's Marriage Among the Trio, Louis Haron's Hawks of the Sun, and David Maybury-Lewis's Akwa-Shavante Society. Taken as a whole the work of these authors amply illustrates the universal fact that societies assign boundaries to separate themselves from their surrounding environment.

It is not sufficient, however, merely to ascribe boundaries; we need in addition to believe in them. In order to do this the boundaries must be considered in some sense "given", for it is normally impossible to make our self-generated fictions into the substance of belief. We need to believe that these boundaries are actually explicit in reality itself, in spite of the fact that as ecologists looking at a system as a whole we know that boundaries are not intrinsic in a cyclical system but rather imposed by the observer in order to provide meaning. At the basis of society, then, there is a confidence trick. We need to believe in the boundaries within what we know to be a boundariless system. We need to hoodwink ourselves into thinking that the categories which we assign to the things of nature are in fact ones which are self-evident in "the nature of things".

The problem of delimiting the society's boundaries is not only one of distinguishing what it is from what it eats. In addition to marking itself off from its natural surroundings, a given society also must distinguish itself from surrounding communities. To put this another way, a society is not only concerned with distinguishing what is natural from what is cultural, but also who is in from who is out. The inside/outside dichotomy is the social corollary to the

nature/culture distinction. It also seems apparent from field work evidence that in practice societies fuse these two separate dichotomies, and tend to use them interchangeably to describe concepts of boundary. Things of nature are in some sense outside, and things of culture are understood to be inside; while those people who are outside are said to be in the realm of nature, and those who are inside are seen to be part of the culture category. When we hear a statement like, "you are a baboon" we all know that an anatomical description is not implied. The speaker is likening us to something in the realm of nature probably because we have done something which is outside the boundary of acceptable behaviour.

Although the necessity to delineate both social and natural boundaries is a universal problem which faces any society, not all societies solve it in the same way. The criterion which serve to judge which elements are said to be part of nature as opposed to culture or inside instead of outside clearly vary from one society to the next, and it is part of the anthropologists' task to describe the variety of bounding systems evident in human experience. Some people regard lizards with particular reverence while others consider them only a nuisance. Some peoples abhor excrement and will go to great lengths to avoid all contact with it, while others not only burn the excrement of cows for fuel but also heap it over their heads at prescribed times. The darkness of the undisturbed rain forest is approached with considerable apprehension by some peoples, while others feel at ease within it and regard it as the source of all that is good. Clearly, the varieties of behaviour associated with the same type of object indicate that societies bound themselves in different ways.

Once again, one does not need to resort to cross-cultural comparisons to understand this. Both literary critics and historians have pointed out that within the English language word meanings have changed over time. This has been particularly true of the concept of "nature" itself. As Raymond Williams remarked:

Like some other fundamental ideas which express man's vision of himself and his place in the world, nature has a nominal continuity, over many centuries, but can be seen, in analysis, to be both complicated and changing, as other ideas and experience change. (Williams: 1970: 1419).

C.S. Lewis spends fifty pages of his book Studies in Words detailing the different meanings which the word "nature" has acquired through usage. What is evident in comparing different cultures is affirmed in the history of any one culture as well: societies bound themselves off from nature and from one another in a variety of ways.

This observation, of course, begs the further question: what is it that determines a society's choice of particular boundaries? Mary Douglas has argued persuasively that the definition which a society has of its environment is nothing more than a reflection of its social structure. As she points out, any conception of environment "...exists as a structure of meaningful distinctions". Furthermore, "...the discriminating principles come from the social structure". She goes on to point out that when the discriminate categories of any system are crossed or confused by matter out of place - that is to say when something is said to be "polluted" or "polluting" - then the anxiety which this creates should really be understood as a deeper anxiety about the structure of the society itself. "If the study of pollution ideas teaches us anything it is that, taken too much at face value, fears about rules of nature tend to mask social rules". According to Mary Douglas, then, we must learn to understand "...each environment as a mark and support for a certain kind of society". (Douglas: 1970: 1274-5).

Raymond Williams adopts roughly the same kind of explanation for the historically variant meanings for the word "nature" in the English language. The meaning of the word changes, he argues, as the social structure of the society changes. Thus, in the medieval world the concept of "Nature the absolute monarch" presents itself, with all the rigid hierarchy of the chain-of-being which one could expect from a feudal social structure. By the seventeenth and eighteenth centuries, nature has been transformed into "...a less grand, less imposing figure: in fact a constitutional lawyer". Under circumstances of rising competition involved in the industrial revolution the concept underwent yet another metamorphosis. "From the underlying image of the constitutional lawyer men moved to a different figure: the selective breeder; Nature the selective breeder". (Williams:1970:1420)

Without denying the validity of the approach used by Mary Douglas and Raymond Williams, it is true that it has only limited value in providing an explanation of the bounding choices which societies make. In effect an explanation of this kind is little more than a sophisticated tautology. Following Mary Douglas we come to the conclusion that a society defines certain things to be outside its boundaries because of what is inside them. The circular character of the argument is apparent.

It is possible to escape this kind of tautology by seeking an explanation for the bounding phenomena of a given society as a function of the ecological niche which it occupies. This approach involves the assertion that varieties of bounding-systems develop to provide societies with categories of meaning under widely differing ecological conditions. The question, then, as to why a society develops particular boundaries is answered by saying that these boundaries have emerged as symbolic statements about the ecological niche which that society has experienced over time.

Ethnographic examples can help make this clear. The Mbuti Pygmies of the Congo, numbering approximately 40,000 live in the Ituri Forest, bordered by Uganda to the east and the Sudan to the north. They depend for their subsistence upon hunting wild game and gathering edible plants within the forest. Game tends to move away from permanent human settlements, and sources of edible wild plants are rapidly exhausted within the immediate environs of a settlement, so the Mbuti migrate as forest nomads in search of food. Colin Turnbull reports that:

... after about a month, as a rule, the fruits of the forest have been gathered from all around the vicinity of the camp, and the game has been scared away to a greater distance than is comfortable for daily hunting. As the economy relies on day-to-day quest, the simplest thing is for the camp to move to a totally new one, perhaps ten or twenty miles away, perhaps farther. (Turnbull: 1965:286-7).

In such a subsistence system it is the undisturbed forest which provides the richest resources for the Mbuti, and it is not surprising to find that in their symbolic representations the "deep forest" or the "dark forest" is portrayed as benevolent. Indeed the image of the benevolent forest is the most pervasive and powerful element of Pygmy symbolism. The Mbuti call themselves "people of the forest", and every aspect of their system of belief seems to reflect the intimate identification which they make between themselves and the forest. As one informant, named Moke, explained to Colin Turnbull:

The forest is a father and mother to us, he said, and like a father or mother it gives us everything we need -

food, clothing, shelter, warmth...and affection. Normally everything goes well, because the forest is good to its children....(Turnbull:1961:87).

Even when things go poorly, the forest is not considered malevolent. Instead it is said to be "asleep". As Moke phrased it:

"...When something big goes wrong, like illness or bad hunting or death, it must be because the forest is sleeping and not looking after its children. So what do we do? We wake it up. We wake it up by singing to it, and we do this because we want it to awaken happy".(Turnbull:1961:87).

When death occurs the BaMbuti do no regard the forest as hostile either. Rather, the words of their song reflect the fundamental harmony which they feel with the forest which surrounds them. "There is darkness all around us; but if darkness is, and the darkness is of the forest, then the darkness must be good". (Turnbull:1961:88).

The Ituri forest is also occupied by varying tribes of Bantu origin, including the Bira, the Lese, the Mangbetu and the Mamvu-Mangutu. Although their physical surroundings are virtually identical to those of the BaMbuti, their modes of exploiting the environment differ considerably and consequently the type of niche which they occupy in the ecosystem stands out in marked contrast to that of the BaMbuti. The subsistence economy of the Bantu groups relies upon swidden agriculture. The collective work of the group is directed towards cutting down forest growth, burning it off in order to form cultivatable fields, planting their crops, and tending them until the time of harvest. The planting process repeats itself annually until one cleared plot of land becomes exhausted. When this occurs the cultivators are obliged to shift their activity to a new area of undisturbed forest, leaving the exhausted land to recuperate in fallow. In the newly chosen forest area the process of cutting, burning, planting, tending and harvesting begins again.

Unlike the BaMbuti, the Bantu agriculturalists subsist by constantly battling the forest. Swidden agriculture depends upon a raw materials-to-rubbish continuum based upon systematic predatory expansion into uncut forest, and as a result it encourages a warrior's attitude towards the environment. Nature is seen as something which exists outside of culture in order to be subdued and exploited by man. As the Bantu agriculturalists carve out their livelihood in continuous opposition to the encroaching forest vegetation, it is not surprising that on a symbolic level the forest is feared and regarded as the source of all that is uncivilized and evil. As Colin Turnbull observed: "The forest ...is thought of by them as hostile for its refusal to support their modest crops while it nourishes the luxuriant vegetation of the forest and its immense, towering trees. The hostility is thought of as a conscious act on the part of the forest itself, and of the spirits which inhabit it"(Turnbull:1965:288). The ecological niche which is implied by swidden agriculture can be seen, then, to give rise to a system of conceptual bounding which differentiates the Bantu peoples significantly from the BaMbuti who occupy roughly the same habitat.

Swidden agriculturalists throughout the world bound culture off from nature in much the same way as the Bantu. Nature is seen as alien and potentially hostile, and the proper relationship towards it is assumed to be one of conquest, subjugation, exploitation and abandonment. The self-image of these societies is based upon an overall conceptual framework of "culture" vs. "nature". The Trio of South America practice swidden agriculture, and as Peter Rivière reports their whole symbolic system is an elaboration of this underlying conflicting dichotomy.

Perhaps the most important distinction which the Trio make is that between forest and village. The village is the world of humans, a sanctuary in which animals kept as pets, even those which are normally hunted, will not be eaten if accidentally killed. The forest is the world of spirits and strangers, and uncertainty. But these two worlds are not separate and independent; the jungle forever encroaches on the village, and the Trio by cutting and burning his field is not merely performing an essential agricultural activity, since these acts symbolize for him a far greater battle. (Riviere:1969:vii-viii)

A similar attitude prevails on the outer islands of Indonesia where swidden agriculture persists, and it is grounded, as Clifford Geertz points out, in "...an historically rooted conviction that there are always other forests to conquer, a warrior's view of natural resources as plunder to be exploited..." (Geertz:1963:27). It is not an exaggeration to say that the image of society for these peoples is something like a digestive tract with raw materials being consumed at one end and waste products and rubbish deposited from the other. The very concept of rubbish, therefore, appears as the operational conclusion of a society whose self-image depends upon the plausible fantasy that the realm of man is to be bounded off from the realm of nature.

Racism is the operational conclusion for the same type of society when analysed in the perspective of social relations. Nature is to culture as "savagery" is to "civilization", and any society which defines the first dichotomy antagonistically with reference to its physical environment is bound to contain within it the seeds of racist thinking in social relations. This occurs in the process of fusing the natural and social dichotomies with boundary-making in social space. For example, the word "savage" can be either an adjective or a noun. In the sentence, "The world around us was nature's savage domain", the word describes what the speaker perceives to be an attribute of "nature" as opposed to "culture". In addition, however, the noun form of the word can be used to stand for those people who are "outside" as opposed to "inside" an acceptable social boundary: "All around our community there were savages". The nature/culture and outside/inside dichotomies are assimilated to one another - they become co-terminous; and in this process of fusion, both distinctions become instances of an overarching "savage"/"civilized" dichotomy, the very basis of racist thought.

Evidence from swidden agricultural societies makes this clear. Anthropologists have long observed that the relationships between those considered inside such societies and those outside are by definition antagonistic. Those outside are suspected of sorcery, witchcraft, and every sort of conceivable subversion with reference to the society's welfare. Furthermore, such evil doings are taken to be evidence that these peoples are depraved by nature. Their very existence constitutes a threat to the society's well-being. Hence, as with the physical environment, one's only proper relationship towards those who are outside is one of conquest and subjugation in an effort to offer them civilization of which by definition they have previously been deprived. The aggressively superior attitude of swidden agriculturalists such as the Ibo of Nigeria has long been noted, and in this context it can be seen to be a logical extension of the way in which they bound themselves in a particular niche of an overall ecosystem.

Societies do, of course, occupy different kinds of ecological niches, and as a result the ways in which they bound themselves lead to different kinds of conclusions. Problems of rubbish and racism may be the inevitable outcome of swidden agricultural societies,

based as they are upon systematic predatory expansion, but alternative modes of bounding are present among peoples whose ecological niche does not allow them to sustain the illusion of antagonism towards nature. The contrast between the BaMbuti and the shifting agriculturalists has already been mentioned as an illustration of this. The pygmies depend upon a delicately balanced symbiotic relationship with the forest, totally unlike the raw-materials-to-rubbish continuum which nourishes the shifting cultivator. In addition, the sedentary agriculturalist or peasant occupies an ecological niche which differs as a total system from both the hunting and gathering of the BaMbuti and the swidden cultivator, even though individual elements seem similar.

The peasant, like the swidden cultivator, derives his subsistence from agricultural production, but unlike the swidden agriculturalist, this production depends upon a delicately balanced symbiosis with a fixed piece of land over time. In this latter respect, his conceptual relationship towards the natural world is much more akin to that of the BaMbuti than to that of the swidden cultivator. He cannot afford to sustain the image of an inherently antagonistic nature which he can perpetually conquer, exploit and abandon. Since as a sedentary cultivator he cannot move to new lands when old ones become exhausted, he can survive only by replenishing nature as well as exploiting it. Irrigation systems, terrace buildings, fertilizer distribution and crop and field rotation are all techniques used by the peasant to replenish nature for what he extracts. While all of these may not be present concurrently, or in any one sequential pattern, some restorative mechanisms involving human labour are needed. In this sense, both man and the land are cooperative elements in one inter-related nature, rather than two distinct realms pitted against one another in perpetual antagonism. Man provides for nature who in turn provides for man.

This sedentary symbiosis inscribes itself in the symbolic systems of peasant peoples. They often consider themselves "people of the land" and express their relationship to the cultivated earth in much the same personal terms as the Mbuti do towards the forest. Natural forces are frequently personified as deities, and these deities are in turn arranged in a variety of hierarchies. As farming is subject to combinations of natural forces, man himself is understood to be subordinate to the gods who control these forces. The appropriate attitude of man towards the gods is one of submissive humility, and the relationship is continuously recalled through the enactment of ritual appeasement or propitiation. As the anthropological study of ritual reveals, rites are not conceived naively as mechanical operations to bring about rain or stop the floods, etc., but rather as dramatic reiterations of the appropriate symbolic order. Man is subordinate, and it is his duty to cultivate the land; the gods are superior, and it is their duty to produce the rain. It is this type of symbolic order which receives repeated affirmation particularly in the agricultural rituals of peasant peoples. The concept of duty is inherent in such a hierarchically arranged system of cosmic roles and it pervades all aspects of the individual's understanding. One has a duty to undertake his assigned role in the larger cosmic system. This is expressed in India as "dharma". Dharma is variously translated into English as "duty", "role", or "the moral order", but as I understand it, it literally means "the supporter". If one is acting appropriately one is said to be following dharma or acting in support of the entire moral order. Everyone is said to have his dharma, but this varies according to his station, and the dharma of a Brahmin is understood to be markedly different from the dharma of a sudra.

The cyclical rhythms of the agricultural process receive particular symbolic statement among peasants. Calendars developed

among sedentary agriculturists to mark the passing of the yearly cycle are based either on solar or lunar movements. Rituals regularly reenact the processes of sowing, reaping and sowing once again. Scholars like Eliade have even suggested that the concept of afterlife is the extension into the human sphere of experience which peasants witness annually in the renewal of life. One need not accept all of Eliade's evidence or reasoning, but it still seems true that sedentary agricultural societies seem quite consistently to develop concepts of an afterlife, some of which are quite elaborate indeed. In such systems one's whole life is symbolically a cycle, for as one reaches death, one is "born again".

In the realm of social relations sedentary agriculturalists mediate the inside/outside dilemma through systems of ritualized hierarchy. The peasant's entire life, and even his afterlife, is comprehensible to him only in terms of a hierarchy. Usually one's position in the total hierarchy is ascribed at birth; and while it is true that one can change from one status to another, this can only be done when one is symbolically "born again", either through a proscribed ritual or through reincarnation. The Indian caste system with its attendant beliefs of reincarnation illustrates this clearly. One is born into a given caste and must live out one's earthly life in that hierarchical position. Upon death, however, one is symbolically reborn, and it can occur that one changes caste either rising or falling in the human hierarchy or becoming some other kind of being altogether. Taken as a total system, then, the caste system is not rigid. Rather it represents over time a constantly oscillating symbolic expression of the cyclical relationship of man and the natural world expressed at any one time in the principle of hierarchy. To equate the caste system of India with the concept of racism is from this perspective clearly ridiculous. As Louis Dumont has observed, "it is hard to imagine a greater misinterpretation". (Dumont:1970:214). Racism, based on the antagonistic dichotomy savagism/civilization, is a feature only of societies which bound themselves off from nature. In a society in which nature and culture are not opposed, social differences are phrased in the metaphor appropriate to a system of cyclical inter-change—that is to say, hierarchy. Since the total system is recognized to be a cyclical one, the boundaries which exist between castes are in no way like the boundary which delineates the savage from the civilized in a system of perpetual expansion. Racism and the caste system belong, quite literally, to two different worlds of discourse.

In the light of ethnographic evidence, we can see that the Western world and America in particular are faced with more than merely technical problems in dealing with rubbish and racism. The historical experience of modern Europe and America is rooted in the same type of ecological niche as swidden agriculturalists—that of systematic predatory expansion. As a result a whole system of self-understanding has been erected upon the fantasies of nature vs. culture and savagism vs. civilization.

Historians have long affirmed the importance of the frontier in American history, and some have even held it to be responsible for the development of a uniquely American character. The first and by now classic statement of the "frontier thesis" came at a meeting of the American Historical Association in Chicago during July 1893 when Frederick Jackson Turner delivered his speech:

"Up to our own day American history has been in a large degree the history of the colonization of the Great West. The existence of an area of free land, its continuous recession and the advance of American settlement westward, explain American development". (Turner:1920:1).

After these opening words, Turner went on to elaborate:

From the conditions of frontier life came intellectual traits of profound importance...The result is that to the frontier the American intellect owes its striking characteristics. That coarseness and strength combined with acuteness and inquisitiveness; that practical, inventive turn of mind, quick to find expedients; that masterful grasp of material things, lacking in the artistic but powerful to effect great ends; that restless nervous energy; that dominant individualism, working for good and for evil, and with all that buoyancy and exuberance which comes with freedom—these are traits of the frontier, or traits called out elsewhere because of the frontier. (Turner:1920:37).

Turner himself was never very explicit about how it was that the frontier actually accomplished these phenomenal feats, but he never really thought that to be his task. The frontier for Turner was a kind of mystic vision. The content of this vision mattered little; the important fact was that Turner believed in it. And so did other Americans—the Turner thesis provided a framework for their self-understanding. The thesis managed to articulate what other Americans felt strongly, and it provided a coherent picture of their own historical experience. For a long time in American historiography it was not necessary to examine the idea; it was sufficient to believe in it.

The critics of the twentieth century finally did attack the Turner thesis, but their criticisms are best understood as correctives, adjustments, extensions or amplifications rather than contradictions of Turner's basic observations. Perhaps the most substantial and most widely accepted corrective is the one offered by David Potter in his book People of Plenty: Economic Abundance and the American Character. Potter feels that Turner was too carried away with the mystic quality of his vision to identify what elements of the frontier experience were the most powerful in determining the American character. For Potter the frontier contained the key to the American achievement—abundance. It was not the frontier itself, but the abundance which it represented in the early American experience which accounted for the American character.

In short, abundance is partly a physical and partly a cultural manifestation. For America, from the eighteenth to the twentieth century, the frontier was the focus of abundance physically because the land was virgin and culturally because the Anglo-Americans of the time were particularly apt at exploiting the new country....(Potter:1945:164).

Since abundance was a function of both the environment and the technology applied to it, the source of American greatness did not evaporate when the physical frontier disappeared. Instead, an expanding industrial world became the new source of abundance. In this sense industrial expansion functioned as a new frontier.

....though physically the frontier remained the site of virgin land, cultural changes gave to people an aptitude for exploiting new industrial potentialities and thus drew the focus of abundance away from the frontier. But this change of focus itself perpetuated and reinforced the habits of fluidity, of mobility, of change, of the expectation of progress, which have been regarded as distinctive frontier traits. (Potter:1954:164).

According to Potter, then, the industrial revolution is not a break with the expanding agrarian tradition in America, but rather an extension of it. Turner's thesis and Potter's corrective complement

more than contradict one another. Analytically, of course, this becomes apparent as well, for the expanding industrial system occupies the same kind of ecosystem niche as that of the expanding agriculturist. Both depend for their self-understanding upon an immutable distinction imposed between nature and culture and schematically both are constructed in the same fashion like a digestive tract with raw materials entering at one end and rubbish being deposited at the other. The American economy, like the swidden agriculture of outer Java, is founded upon what Geertz has termed "an historically rooted conviction that there are always other forests to conquer, a warrior's view of natural resources as plunder to be exploited..." (Geertz: 1963: 27). Rubbish then, is most adequately understood not as an incidental technical problem for the western world, but rather as a built-in feature of the society itself—something whose abolition would pose considerable problems to the western world. It may well be that rubbish has to be eliminated, but in order to do so, Americas will have to undertake an entire restructuring of its historically derived categories of meaning.

American history indicates that the development of racism is similarly a consequence of predatory expansion. Turner unwittingly affirmed this when in reference to the frontier he wrote, "In this advance, the frontier is the outer edge of the wave - the meeting point between savagery and civilization". (Turner, 1920: 3). In a later work, entitled Savagism and Civilization: A Study of the Indian and the American Mind, Roy Harvey Pearce traces the historical development of the concept of the Indian as "savage". As his painstaking research indicates, the image of the Indian as a savage emerges from a history of conflict.

When frontier New Englanders suffered at the hands of Indians they inevitably interpreted their sufferings as God's warning to New England through Satan... Thus for those who lived in the frontier settlements to the west and south and to the north in Maine, it came to be, simply enough, destroy or be destroyed; this was yet another skirmish in man's Holy War against Satan, now on a new-world battlefield (Pearce: 1953: 22-23)

There is no doubt that Americans believed in such imagery. Politicians as well as clergy often used it throughout American history. Nor was racial prejudice confined to the American Indian. As the speech of Senator Thomas Hart Benton in 1846 indicated, attitudes towards black races were merely extensions of racist categories Americans had derived from their own experience:

It would seem that the white race alone received the divine command to subdue and replenish the earth.

For my part, I cannot murmur at what seems to be the effect of divine law. I cannot repine that this capitol has replaced the wigwam—the Christian people, replaced the savages—white matrons the red squaws—that such men as Washington, Franklin, and Jefferson have taken the place of Powhattan, Opechonecanough and other red men howsoever respectable they may have been as savages. Civilization, or extinction, has been the fate of all people who have found themselves in the track of the advancing Whites, and civilization, always the preference of the whites, has been pressed as an object, while extinction has followed as a consequence of resistance. The Black and the Red Racer have often felt their ameliorating influence. (Cited in Pearce, 1953: 239-40).

Racism does not disappear with the end of the physical presence of frontier, for as Potter has indicated, the frontier experience transforms itself almost without interruption into the structures of expanding industrialization. Although racism may originate as the solution to an inside/outside dichotomy within a system of predatory agrarian expansion, it has no difficulty in surviving as a phenomenon in a society based upon industrial expansion, for as we

have seen the transformation from one type of society to the other involves no fundamental change in the kind of niche which is exploited within the ecosystem. Racism, every bit as much as rubbish, is a built-in feature of western society, and in a similar way its elimination would involve a fundamental overhauling of western categories of self-understanding. It is not sufficient to conceive of either of these problems as ancillary flaws to an otherwise impressive societal achievement.

Doubtless there are some who see evidence of changes in western attitudes on these two subjects. Indeed our technological achievements may be leading us to the type of cyclical comprehensions characteristic of a feudal society or the Indian peasant. The self-contained space craft is an attempt to reproduce an artificial ecosystem, in which the carbon dioxide, body heat and waste products of the astronauts will be re-cycled to provide oxygen, food and water. New concepts of boundary are needed to convince the astronauts to eat the food they produce. Similarly, the "untidy" styles characteristic of youth seem to indicate a healthy experimentation with artificial boundaries. Michael Thompson has even gone so far to say that these events are indices of what he calls "The Death of Rubbish". I hope that he is right, and I look forward to seeing someone announce the death of racism with similar confidence.

For the time being, however, I must confess that I remain undevoted of what Thompson claims is the clear trend of the future. The imagery of the western world and particularly America is still grounded in predatory expansion. President Kennedy won the election in 1960 on the promise of a "New Frontier" and President Johnson found it useful to describe his welfare programs to the electorate as a "War on Poverty". It may well be true that youth is experimenting in a hopeful way with boundaries, but radical youth, with its imagery of struggle, revolution, war on the "pig", etc., does not seem to have transcended the nature/culture and savage/civilized dichotomies; instead, they have only changed the content of the respective categories. If these categories persist there seems to be little hope of overcoming the dilemmas which racism and rubbish present, even though it may be possible to undertake a slight rearrangement of those things which are inside as opposed to outside.

As for the space craft dream, I fear that the precepts which it should teach us will escape our grasp. No doubt the technical problem of re-cycling will be solved, but I can hear our technicians and politicians congratulating themselves already, without a hint of irony, on the fact that this will open up "new frontiers of space". One could hardly conceive of a more complete misunderstanding of our own technical achievement. Frontier imagery leaves us with no way of coping with the problems before us. If the elimination of rubbish and racism is our goal, then changing our minds is the first step.

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REVIEW ARTICLE

TENSIONS AND ONOMASTICS

Banton (1964) 'Social Anthropology has been distinguished by intellectual brilliance'.

Recently, programmatic statements have been made by three members of the Institute. (1970, 1970, 1971) They relate to whether or not British Social Anthropology has arrived at a critical stage of its history. Needham's paper contains an outline of those criteria necessary to evaluate the claims disciplines make when called upon to justify their autonomous identities. Needham suggests that of these criteria—exclusive subject matter, special methods of analysis, distinctive body of theory, achievements (if these be related to a distinctive intellectual approach) — a 'unitary and continuous past so far as ideas are concerned' is of primary importance. Social Anthropology's apparently weak claims to being a distinctive discipline are readily indicated on the application of these criteria. Furthermore, since 'the more scholarly and technically expert an investigation, the less feasible can it be to retain that panoptic vision which has been the source of strength to Social Anthropology and which can even be regarded as all that really defines it' (44) what limited identity the subject once had is on the wane.

This, for Needham, is not a matter of conjecture but of historical fact. It is clear that social anthropology, in an 'accelerating' manner, is 'splitting up', to the extent that a decisive prediction is justifiable — 'both the personnel of anthropology and their ideas will [and this is 'almost inevitable'] become dispersed among other academic subjects' (44). This is what is happening, and what can be reasonably predicted. But Needham's paper is also about what ought to happen. His final sentence runs — 'If social anthropology takes this course (of progressive dissolution as members merge with other disciplines) it will not need to face disintegration; it will undergo an iridescent metamorphosis'. (46: my emphasis).

This raises a problem: Needham is suggesting 1) that anthropology is, and can be expected to, disintegrate, and 2), as his title also indicates, the subject is facing a divide — a choice between disintegration and metamorphosis. I think that what he must have in mind is this. Whatever the case, social anthropology as an institutionalised discipline will disintegrate. But if we welcome this and actively affiliate with other disciplines that which is most worthwhile in our subject will be retained. If, on the other hand, a tortured and labourious rearguard fight is engaged in, the subject will tend to become more inward looking and will have to face the prospect of being totally discredited. So the alternatives are — accept disintegration with open arms in which case all that will disappear will be the title of the subject and certain moribund aspects, or attempt to prevent the inevitable which would result in a more total dissolution.

It is perhaps strange that given his prediction Needham should write 'it will not need to face disintegration'. 'It' cannot refer to the situation after 'iridescent metamorphosis' (46) precisely because we have to face disintegration to achieve this new situation. What, presumably, Needham means by 'it' are those aspects of anthropology which are worth saving, in which case what social anthropology need not face is the danger of being discredited. So, since metamorphosis can only come out of dissolution, it would perhaps have been clearer if Needham had written instead: 'it will not need to face becoming part of intellectual history'. The choice is between positive and negative disintegration, between rebirth and death. It is also curious that if anthropology can invigorate other disciplines (that is implied by the term 'iridescent'), why should we

move out 'it'? Or, to put it another way, if 'it' refers to that of value in the subject, why face dissolution? What, in terms of Needham's proposal, does not have to be faced is discredit. However, if this occurred, other scholars would, so to speak, 'move in' (as anthropologists have into such fields as the rather inward looking, traditionalist subject of European mythology) and so effect precisely that move Needham is arguing for - but from the the opposite direction.

One suspects that it is not so much the failure of our subject to live up to the listed criteria which encourages Needham in his argument (after all, the same problem affects most of those social sciences with which we might amalgamate), but the intellectual poverty of many anthropologists and their investigations. I do not suppose that many thoughtful anthropologists would disagree with this assessment of the subject as taught in many British Universities. A number of participants do appear to be mesmerized by the heap of relatively simple 'discoveries' that constitute the core of their tradition, and tend to spend their time re-arranging the building blocks, not to speak of exposing their theoretical poverty through mystifying and mystifying such techniques as 'structuralism'. But Needham's conclusion, to which I will return, that unless we actively participate in disintegrating our discipline through affiliating with researchers in other fields, disintegration will occur without 'iridescent metamorphosis' appears to be more debatable.

Banaji also speaks of a 'future distracted between disparate sectors of the human sciences' and likewise relates this to the 'arrested' intellectual development of British Anthropology'. Much of his paper is taken up with outlines of the roots of the various theoretical failures that have occurred in the course of this history. Many of the criticisms are well known to anthropologists, but Banaji's observations become more interesting as he progresses into the less crystallised realms of modern anthropology. Unfortunately the scope of his article does not extend to cover the proposed alternative - a Marxist science of social formations. His evaluation of the impact of structuralism suffers in that one strand of structuralist thought is virtually ignored. For Banaji, structural techniques 1) treat social facts as part of a system of communication and 2) regard social phenomena as projections of unconscious processes. It is then claimed that the procedure, in this strong sense, has been either ignored, or 'progressively dismantled' by British Anthropologists. One suspects that this is not an all-together fair summary. Think, for example, of Dialectic in Practical Religion (ed. Loach). And Banaji underestimates the significance of Needham's work if he regards it as only the "excessively restrictive and aseptic use of the structural method" in the total structural analysis of prescriptive alliance systems. Furthermore, has not the structuralist impact been equally uneven in the context of French Anthropology?

But my main objection is that another revolution has occurred, one that Banaji only mentions in passing ('to the growing emphasis placed on a hermeneutic as opposed to a structural mode of analysis'). The tradition, traceable to such as Evans-Pritchard, Collingwood and Weber and which we can label 'structural hermeneutics' is still of the foremost importance in British Anthropology, and in fact, from a remark that Lévi-Strauss made whilst recently in Oxford, he himself would agree that the primary task of the anthropologist is as much to make intelligible odd customs and beliefs as it is to discern unconscious generating mechanisms.

On first sight Ardener's paper might also appear to substantiate those two claims that anthropology is facing disintegration; he speaks of an epistemological break of such a fundamental order that the two primary styles of investigation popular today operate in different conceptual spaces'. But although mention is made of the chaotic stage of the 'new anthropology', a characteristic which

can be traced to the insecurity felt by those who are rather tentatively moving beyond the canons bounds and limitations of traditional empiricism, he clearly is not suggesting that this hesitancy represents anything more than a passing phase. In direct contradistinction to Banaji's treatment of Needham, Needham is presented as one of those select few who have fully grasped the implications of the new style. No mention is made of any relapse in British Anthropology from the purity of continental endeavours. Instead, the epistemological security of the new approach is emphasized by its relation to recent tendencies in other disciplines which also seek modes of interpretation supplementary to positivism.

Ardener, succinctly and with considerable plausibility, justifies the logical stature of analysis in terms of programmes and paradigms, and goes a long way towards demonstrating that the 'earth' of the old style empiricists plea - 'come back down to earth' does not exist in that simple sense. This formulation clearly clarifies and strengthens the anthropological response to modern marxist theorising. In any case, it is not clear, for Banaji, whether anthropology will retain its distinctiveness or whether it will become assimilated into the marxist sciences - the former is implied in his phrase - 'Marxist Anthropologists', the latter in his plea for a science of social formations. What Ardener does is to indicate that at least in certain crucial respects the thought of such Marxist philosopher as Althusser is developing in a direction surprisingly akin to that already marked out by the 'new anthropology'.

This is not the place to attempt to fill in the details of Ardener's programmatic statement, which will be soon in print. For those who want to gain some picture of the interplay of the two planes of analysis, syntagmatic and paradigmatic, perhaps one of the most useful books to read is Leach's Pul Eliya, since the crucial theoretical status of ecology is therein realised. And, in another vein, Hasso's The Glass Bead Game more than adequately suggests the delights and pitfalls of paradigmatic analysis. What must be emphasized is that this Malinowski Memorial Lecture in the first comprehensive statement to appear in the anthropological literature devoted to analysing the tensions latent in our subject in terms more adequate to the reality. The notions structuralism/functionalism are supplemented, on another plane (so no direct correspondences should be looked for) by the terms syntagmatic and paradigmatic.

But what relation does Ardener's paper bear to Needham's? In the first place, what would be the adverse effects of 'progressive dissolution'?

- 1) Needham himself, in his introductory remarks on the future of kinship, maintains that it is impossible to treat one such topic in isolation, but this view would appear to exist in tension with an opinion we have already noted - that disintegration is already occurring because the Maussian epistémic vision is more or less a myth.
- 2) As his own contributions to structural analysis suggest, a 'totalized' view of certain social phenomena remains a most profitable stance to take.
- 3) If the state of anthropology in Germany is anything to go by, many positive benefits do appear to be acquired through scholars interested in the same problems working together within a common terminology and stock of ideas. It does not matter where such ideas come from; what does count is that major problems are tackled systematically - as, for example, by the Annae Sociologique School.
- 4) A possible objection to this last point is that there are no distinctively anthropological problems. If Lévi-Strauss is anything to go by, there are. 'The distinctive feature of anthropology among the human sciences is to look at man from the very point where, at each period in history, it was considered that anything man-like had ceased to exist' (Lévi-Strauss 1966:127). Needham does not appear to take full cognizance of the fact that many concerns are unique to and constitutive of anthropology, in that no other disciplines are investigating such matters.

That positive effects of dissolution have already been hinted at - in the face of the intellectual poverty of some branches of anthropology, Needham's suggestion for wiping the slate clean by absorption into more distinguished disciplines might appear to be the only answer. And it is almost certainly true that some branches of the subject (Needham mentions economic and political anthropology) could with advantage become affiliated to their 'mother subjects'. If Ardener's paper is to be taken as a correct portrayal of recent developments in anthropology, then the first of these arguments is considerably weakened. As Needham must well know, since he has taught so many of them, there is a new generation of students being trained, at least at Oxford, in the style as outlined by Ardener. That one of our most distinguished and sensitive thinkers should, as a result of an all too justified concern at the current state of the subject, recommend the particular course of action that he does is understandable. Nevertheless, it is difficult for the younger generation of us to give up just when the dialogue between the new anthropology and structural-functionalism is so rapidly gaining momentum.

What will happen to this debate if the more able minds retreat to other disciplines? Debates are generally worthwhile and, since they belong to particular historical moments, they cannot be transplanted to alien contexts. In any case, if disintegration does occur, the residue that will be left behind will probably be those elements most likely to discredit the subject. If anthropology can be reinvigorated from within through the internal working-out of the ideas of such as Winch (1), the structural linguistics, semiologists and others developing the 'new paradigm', is the need for assimilation with other branches of knowledge so urgent?

To return to labeling. The articles under review can all be treated as attempts to isolate and so label techniques, subjects, paradigms and theoretical approaches. It seems to me that when what is at stake is the nature of different styles of investigation, the organisational devices so applied to characterize the approaches must be selected with the utmost care; in this manner Ardener is able to transform our view of what is already going on. But when it comes to labeling disciplines, a very different situation prevails. In the mesh of social sciences, labels should retain their distinctive character as such when they are applied to either disciplines or topics such as kinship. After all, to say that 'there is no such thing as Kinship' (Needham:34) is a measure of analytical success. Why should we expect, a priori, there to be anything distinctive about the particular social sciences, when what is isolatable, what we work on, is a series of problems in accordance with a series of techniques?

If the problem and techniques of anthropology were to become 'weak' Needham's viewpoint would come to bear more weight. But, as it is, he attempts to back up his case, as founded on an in part justifiable dissatisfaction, by demanding of a label a set of criteriologically demands which it should not be made to bear. It is unfortunate that academic, institutionalized, boundaries are arbitrary but it only heightens their importance to apply such criteria. And then to speak of the disintegration of anthropology serves only to make the label more concrete than it really is. This could work, for example, to encourage those tendencies within anthropology that should be eroded, to react and thereby acquire a false sense of identity.

Surely, for all scholarly ends it hardly matters what we label ourselves and the institutional situation of a discipline is not of all that significance in the actual task of advancing knowledge. To stress the identity of 'social anthropology' can be as misleading as basing arguments on the weak denotative powers of the title. What is important are the limits of theoretical paradigms, as

as discussed by both Ardener and Banaji, not the limits of disciplines. In fact, if emphasis be placed on the latter, the map of the paradigms becomes correspondingly distorted; a situation which has prevailed for too long. The role of titles becomes increasingly less as one moves away from paradigms - problems to subject - matters and disciplines. The former, generate the latter, so if Levi-Strauss (1966:127) is correct (the traditional problems of anthropology "are assuming new forms while none of them can be said to be exhausted") there is no fear that the institutionalized reality of anthropology will become hollow, time consuming and money wasting. Bearing in mind 'different conceptual spaces' Ardener would no doubt agree with Levi-Strauss' comment - 'Anthropology will survive in a changing world by allowing itself to perish in order to be born again under a new guise' (1966: 126) but that is not the same thing as an 'iridescent metamorphosis' of the variety suggested by Needham. Perhaps the time for pessimism is past - who today could agree with Worsley that 'no more powerful alternative to structural/functionalism has been generated within anthropology itself? (2)

Paul Hoelas

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Notes

- (1) Ardener's paper, it should be noted, gives full weight to the views expressed by Winob.
- (2) The ideas expressed in this article have gained from conversation with Malcolm Crick.

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BOOK REVIEW

A.S.A. 9. Witchcraft Confessions and Accusations.

(ed. M. Douglas, Tavistock, 1976).

The essays in this volume were presented at the A.S.A. conference at Cambridge 1968. They are intended to honour Evans-Pritchard and to commemorate his justly famous monograph of 1937. But for a scholar (like Hocart in this respect) who never became infected by the vulgar positivism and scientism introduced into our discipline by Radcliffe-Brown and Malinowski, the contents of this book can surely be no real tribute. We are glad to see historians working on our type of problem; in anthropology we must be grateful for scholarship from any source. The stance of many of the anthropologists, however, is a latter-day structural-functionalism that one had hoped could not survive into the 70's. Ardener's paper is the only one to make real reference to Lévi-Strauss' work on primitive thought, and his use of the idea of a template (in the sense this term has in molecular biology) sets it apart from the rest and puts it in the same class as Douglas' excellent article on primitive rationing in A.S.A.6. The papers by Pitt-Rivers, Ruel and Lienhardt are commendable but most of the others are uninspired. I might take Lewis' "A Structural Approach to Witchcraft and Spirit-Possession" as an example. It represents a type of study in the Radcliffe-Brownian conception of comparative sociology, the type of endeavour which Pocock in his perceptive and precocious introductory book (1961) quite rightly says must be abandoned rather than refined. Correlational exercises are, in the exact sciences, always indicative of inadequate conceptual work. And no-one but a social scientist in this tradition could possibly be so naive as to conceive the relationship between social structure, belief and values to be so simple as his essay supposes. The appearance of the term structural in the title also seems rather odd (unless there is a special London usage of the word). Surely Chomsky's work ought to have brought seriously into doubt the explanatory adequacy of the type of parametric model which Radcliffe-Brown bequeathed us for dealing with any type of meaningful rule-governed human phenomena? But, it seems, many are unaware that there is any other type of approach available for our discipline. Kingsley Davis' comment in 1959 that functionalism is not a particular social theory but is sociological explanation had all the signs of a last desperate stand for one conception of social science, but, unfortunately, it appears that many believed him. Boulden's obvious feeling of dissatisfaction is surely just, and perhaps too politely expressed. The need he indicates for real rethinking rather than more studies is required not only in this field but throughout the whole discipline. If the type of work in this book is given to a new generation of students in 1971 as current social anthropology it may do irreparable harm. It would be no loss to the academic world if such a tradition were to disintegrate. Evans-Pritchard in 1937 was responsible for a redirection in anthropological attention. It seems that teaching in many departments of this country goes on unaware of the significance that such, and other, different approaches could have for our subject. Certainly the majority of articles in this book do not remotely approach the degree of intelligent sensitivity in the treatment of primitive thought which Evans-Pritchard attained so many years ago.

Malcolm Crick .

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